L44 ANSWER 1 OF 57 HCAPLUS COPYRIGHT 2

AN
TI
IN
PA
SO
DT
LA
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	A1			

DESIGNATED STATES: W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

AU	A1		AU
PRAI US			
WO			

AB The present invention relates to sustained-release [illegible] using biodegradable **alginate** delayed gels or particles and methods. Leptin (1.0 mg/mL; 10 mM Tris HCl, pH 8.0; pH adjusted to pH 8.0 to 8.5 with 1M NaOH) and 6% Et **alginate** (15 mol%, 10 mM Tris HCl, pH 7.6) were cooled on an ice bath. Leptin (0.5 mL) was added to the 6% Et **ester alginate** (0.18 mL) and the mixt. stirred on an ice bath for 10-15 min; the final pH was 8.6-8.8. To this mixt. was added a suspension of 1M CaCO3 (16 .mu.L) and the resulting suspension was mixed well. To this suspension was dropwise added, with [illegible], a soln. of 0.1M ZnCl2 (100 .mu.L); water was then added to bring the vol. to 1 mL. Then a soln. of 1.6mM 6-gluconolactone (56 .mu.L) was [illegible] highly stirred into this mixt. The final mixt. (50 mg/mL leptin, 1% Et **alginate**; 0.1 mL) was cast on the inside of an Eppendorf tube and left overnight at 4 degree. to gel. After overnight storage, the leptin release was monitored in 10 mM histidine buffer, pH 7.4. The first gel with 15 mol% degree of **esterification** had minimal burst and fairly constant leptin release showing 60% released in 6 days. The first gel with 10 mol% degree of **esterification** had minimal burst and fairly constant leptin release showing 55% released in 6 days.

RE.CNT 9

RE

1 Amgen Inc; WO 9946211 A 1999
2 Heekman, A; WO 9951348 A 1999
3 Heinto, R; US 5770845 A 1997
4 Immunex Corp; WO 9606641 A 1996
5 [illegible], M; Biol Pharm Bull 1993, V16(4), P421 HCAPLUS
6 CITATIONS AVAILABLE IN THE RE FORMAT

... ? ... and 144 ...

L44 ANSWER ... OF 87 HCAPLUS COPYRIGHT ... ACS
AN ...:...:...:... HCAPLUS
DN ...:...:...
TI Microbicidal and sanitizing soap compositions
IN Lipps, John A.
PA USA
SO U.S., ... pp., Cont. of U. S. Ser. No. 881,6..., abandoned.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT ...

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 5041479	A	1989 ...	US 1987-...	...
PRAI US 1986-...		1986...		

AB The invention relates to microbicidal and sanitizing soap compns. that incorporate agents with tuberculocidal properties in a ready-to-use form that has gel properties or thixotropic properties and soap compns. suitable for diln. in or with water or non-aq. diluent to produce gel-like or thixotropic solns. or dispersions ranging from free flowing to solidified forms. The ready-to-use compns. and the diln. compns. are applied for purposes of personal or animal hygiene to sanitizing on hair, hands and skin or other body parts, or are applied to inanimate surfaces and objects that need to be sanitized. For example, a soap compn. contained Na C14-16 .alpha.-olefin sulfonates (40 %), lactic acid (88 %) 1, Xanthan gum 0.5, Aloe vera powder 0.1, lemon oil 0.1, and water q.s. to 100 %.

RE.CNT ...
RE
(1) Ambice; US 4545979 1985 HCAPLUS
(3) Anon; DE 3229097 1993 HCAPLUS
(4) Anon; GB 2216419 1994 HCAPLUS
(5) Brokken; US 4945110 1990 HCAPLUS
... Curtis; US 4213961 1980 HCAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L44 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2008 ACS

AN [illegible] HCAPLUS

TI [illegible]

IN [illegible]

PA Pixel Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP [illegible]	A2	1999 [illegible]	JP 1997-[illegible]	[illegible]

AB The cosmetics contain (A) a silicone gel compn. and (B) oil-selling agents, (C) water-sol. polymers, and (D) H2O. The cosmetics show good water resistance and have no stickiness. A gel was prepd. from 5 [illegible], polyoxyethylene (12)16 alkyl ether phosphate 0.1, [illegible] alkyl 1.0, carboxyvinyl polymer 0.2, 1% NaOH soln. 0.6, EtOH 10.0, glycerin 10.0, KSR 16 (silicone gel compn.) 2.0%, and H2O balance.

L44

L44 ANSWER 1 OF 1 WPIX COPYRIGHT 2007 THOMSON REUTER
AN 1990-[illegible] WPIX
DN [illegible]
TI Artificial aqueous media containing water-absorbing polymers and surfactants for planting
IN Hirai, Masaharu; Ikeda, Tetsuya; Suzuki, Takeyuki
PA Fuji Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 3 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 1 [illegible]	A2	1990-11-[illegible]	JP 1987-[illegible]	[illegible]

AB The aq. media contain 0.01-1 wt.% water-absorbing polymers and 0.01-1 wt.% surfactants. Artificial media comprising the aq. media and soil, sand, inorg. substances, and/or supports are also claimed. Primula polyantha planted in an aq. medium contg. 0.6 wt.% sodium polyacrylic acid Na salt and 0.1 wt.% **cetyltrimethylammonium** chloride (Quartamin 60W) I showed better growth than plants planted in a control medium without I.

[illegible]

L[illegible] ANSWER [illegible] HAIRLOS [illegible] WEIGHT [illegible] AMP
AU [illegible]
TI [illegible]
TI Hair-styling gels with base of a fixing polymer and [illegible] agent
Hair styling gels
IN Jamain, Henri; Chetris, Isabelle
PA L'Oreal S. A., Fr.
SO Fr. Demande, 24 pp.
CODEN: FRXXBL
DT Patent
LA French
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI FR [illegible]	A1	1997 [illegible]	FR 1996-[illegible]	[illegible]
FR [illegible]	B1	1998 [illegible]		
WO [illegible]	A1	1997 [illegible]	WO 1997-FR[illegible]	[illegible]

W: JP, US
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, [illegible], LU, MC, NL, PT, SE

PRAI FR 1996-[illegible] [illegible]
AB The title compns. contain [illegible] fixing polymer, [illegible] gelatin agent and has viscosity (V) 10[4.4-1.6lg(P)] < V < [illegible] where P = total # prom. of fixing polymer and P [illegible] *; for P < * the viscosity is [illegible]. The gels provide rapid styling and good hold as well as good cosmetic properties such as shine and a natural feel. Thus, a styling [illegible] prepd. from vinyl acetate-vinyl p-tert-butylbenzoate-crotonic acid [illegible] polymer 2-acrylamido-2-methyl-1-propanol salt (fixing polymer) and hydroxypropyl guar [illegible] Jaguar HP60) in water. The viscosity of the gel was [illegible] cps. The gel, applied to hair with hands, dried rapidly, and imparted good hold and feel. The hair also exhibited good shine and a natural [illegible]. Hair styled with gels based on the same components, but having [illegible] viscosity outside the range defined, was wettened by the gel and the hair style was flattened.

[illegible]

[illegible]
AN [illegible]
TI [illegible] **polysaccharides**
IN [illegible]
PA [illegible]
SO [illegible]
DN [illegible]
PI [illegible]
LA [illegible]
FAN. CNT [illegible]

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

AB [illegible] disinfectants, which are skin-[illegible] and [illegible] with [illegible], contain [illegible] and/or their derivs., fatty [illegible] **esters**, and lower alcs. and disinfectants, in which [illegible] of the lower alcs. is 1-5 wt.%. A pick-drying disinf. [illegible] was prepd. from benzalkonium chloride 0.5, carboxyvinyl polymer [illegible], xanthan gum 1.5, diisopropyl adipate 0.3, triethanolamine 1.0, EtOH [illegible], and H2O 56.4 g.

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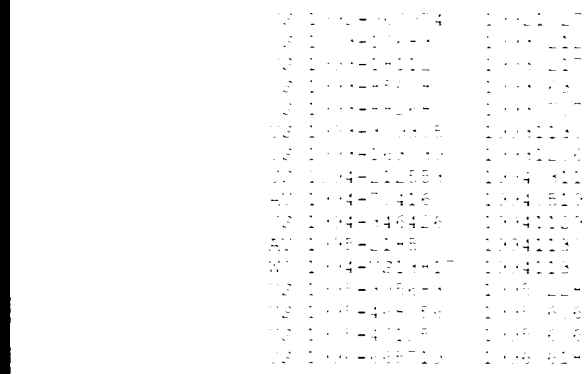
(54) ...
(71) ...
(72) ...
(73) ...
(74) ...
(30) ...
(60) ...
(63) ...
(51) ...
(52) ...
(58) ...
(56) ...

	PATENT NO.	KIND	DATE	APPLICATION NO.	FILE
	US 5...4...	A	199... ...91	US 1...4-...4...	... 41113
	US 5 ...4...	A	199... ...4	US 199... ...4...	... ...
	W... ...1...	A1	1991 ...11	WO 199...-US...	... 1113
	W: CA, JP				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, ..., ...				
	JP ...55...6...	T2	199... ...13	JP 1991-5...47	... 1113
	AT 1... 17...	E	1999...615	AT 1991-9...4...	... 1113
	ES ...41 51	T3	1999 ...16	ES 1991-9...4...	... 1113
	US 5...-4446	A	199... ...1	US 1991-71... -...	... 1 ...1...
	W... ...47	A1	199...1113	WO 199...-US...1	 111
	W: AU, CA, JP				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, ..., NL, SE				
	AU ...1... ...	A1	199... 111	AU 1992-1... ...	 111
	AU 6674...	B2	1996 ...4		
	JP ...65...364	T2	1994 ...11	JP 1991-5...-4	 331
	EP 5185...	A1	1994...929	EP 1992-91...45...	...1...331
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, ..., NL, SE				
	US 5460554	A	19951124	US 1993-76239	... 30611
	US 5...5...	A	19961203	US 1993-76...5	 611
	US 5...4...16	A	1994...11	US 1993-...1...6...	... ...
	US 5...1...6	A	1996...16	US 1993-16...4...	... ...11...
	US 5...5111	A	19961117	US 1994-16...4...	... ...11...
	US 5...1...	A	199... 613	US 1994-1...4...	... 4 ...
	WO 94...74	A1	1994112...	WO 1994-US...	... 4 519
	W: AU, CA, JP, NO				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, NL, PT, SE				
	US 5773024	A	19980630	US 1994-307...	... 40016
	CA 2177713	AA	1995...6...	CA 1994-...17771...	... 41130
	JP ...6...6...	T2	1997...617	JP 1994-515...	... 4113...
	US 5571497	A	19961105	US 1995-46...5	6
	WO 11... 31...	A	199... 413	ON 1996-1...	... ...
	US 6 ... 1...	A	19990114	US 1996-...71	... ... 61...
	US 5...5...	A	1999...13	US 1996-75...17	... 41125
	US 5...5...4...	A	19981116	US 1997-...4...	... ...1...
	AU 71...1...	B2	1999...11...	AU 199...-...71	... ... 1...
	AU ...5...71	A1	199...1...7		
	AU 9...4 5	A1	1994...113	AU 1994-...4...	111
	AU 691...4...	A1	1993 ...14	AU 1993-1 ... 4...	...-... 1...4
1997	US 1...9-455...7	19991222			
	US 1...1-...563...4...	199... ...20			
	US 1991-...16-...	1991 ...14			
	US 1991-...17-...	1991 ...14			
	US 1994-...76...3	1994 ...11			
	US 1994-...7615	1994 ...11			
	US 1994-1...1...4	1994...113			
	US 1994-1...1...7	1994...114			
	US 1994-1...-1...4...	1994...114			
	US 1994-1 ... 4...	1994 ...16			
	W... 1...-...5...	1995 ...13			
	US 1...1-...5...-...	1995 ...16			
	US 1...1-...1...-...	1995 1 ...4			
	W... 1...-...5...-...	1995 ...41			



AB Gas and vaseline pressurized filled microspheres, and [illegible] provide novel topical and s.c. delivery vehicles for various active ingredients, including drugs and cosmetics. Gas and vaseline pressurized filled microspheres when prepd. from cephalin-cholesterol [illegible].

L [illegible] ANSWER 1 OF [illegible] WPIDS COPYRIGHT [illegible] ACS
AN [illegible] WPIDS
TI [illegible]
TI [illegible] composition forming a gel
IN [illegible] Olsen; Lindell, Katarina
PA [illegible] Olsen, Sven.; Lindell, Katarina
NP [illegible] Int. Appl., 17 pp.
[illegible] IBNI BIXXDL
LT [illegible]
LA English
FAN.CNT 1
PATENT NO. KIND DATE APPLICATION NO. DATE
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PI WO [illegible]74 A1 [illegible]96 WO 1997-SE1853 [illegible]
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE
SE [illegible]34 A [illegible]14 SE 1996-344 [illegible]
AU [illegible]44 A1 [illegible]14 AU 1997-44[illegible] [illegible]
PRAI SE 1996-344 1996[illegible]
WO 1997-SE1853 1997[illegible]
AB An in situ gel forming pharmaceutical compn. for [illegible] administration to a target organ in the body, said compn. essentially [illegible] of a water in oil emuln. the oil phase containing surfactants, [illegible] gel forming water sol. polymers, a drug and optionally [illegible], said drug having lipophilic properties, as it binds stronger to [illegible] aggregates of surfactants than to water, whereby its release from [illegible] situ forming gel to the target organ occurs slowly. A compn. was [illegible]. Viscosity. Labrafil prist [illegible].mu.g, Et hydroxyethyl cellulose 4 [illegible], **cetyltrimethylammonium** bromide 13 mg and water to 4 [illegible].

[illegible]

L[illegible] ANSWER [illegible] OF [illegible] HEALTH [illegible] COPYRIGHT [illegible] ACS
AN [illegible] HCAPLUS
DN [illegible]
TI Manufacture of stable cosmetic emulsions by mixing and emulsifying oily phase and aqueous phase
IN Matsuzawa, Kazuhiro; Hattori, Tetsuya
PA Kao Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
[illegible]	A2	1997[illegible]	[illegible]	[illegible]

AB Title cosmetic emulsions are manufd. by mixing and emulsifying oily phase contg. cationic surfactants and aq. phases contg. anionic materials. **Stearyltrimethylammonium** chloride (1.6 g) was dissolved in an oily phase contg. cetostearyl alc. [illegible], glycerin pyrolaurate [illegible], glyceryl monostearate [illegible], polyoxyethylene monolaurate [illegible], and ethylene glycol distearate [illegible]. Then, the oily phase was mixed with an aq. phase contg. poly aspartic acid Na salt [illegible], glycerin [illegible], triheptanoin [illegible], and H2O 165 g and stirred with [illegible] homomixer to give a phase, which was stable at 45.degree. for 1 wk without sepn.

[illegible]

L4 ANSWER [illegible] OF [illegible] HCAPLUS COPYRIGHT [illegible] ACS
AN [illegible] HCAPLUS
DN [illegible]
TI Cellulase with reduced mobility by immobilization [illegible] for use in laundry detergents [illegible] fabric [illegible]
IN Nielsen, Jack Bech; Tikhomirov, Dmitry Felixovich
PA Novo Nordisk A/S, Den.; Nielsen, Jack Bech; Tikhomirov, Dmitry Felixovich
SO PCT Int. Appl., [illegible] pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO [illegible]	A1	1997[illegible]	WO 1996-DK[illegible]	1996[illegible]
	W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, [illegible], [illegible], DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, [illegible], [illegible], LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, [illegible], [illegible], RO, RU, SD, SE, SG				
	RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, [illegible], FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, [illegible], [illegible], GA				
	AU [illegible]	A1	1997[illegible]	AU 1996-6[illegible]	1996[illegible]
	EP [illegible]	A1	199[illegible]	EP 1996-9[illegible]	1996[illegible]
	R: BE, DE, DK, ES, FR, GB, GR, IT, NL, SE, PT, I				

PRAI DK 1995-75[illegible] 1995[illegible]
WO 1996-DK[illegible] 1996[illegible]

AB A cellulolytic enzyme prepn. comprising a cellulase w[illegible] reduced mobility is prepd., e.g., by increasing the mol. wt. or appa[illegible] size of the cellulase protein mol. or by insolubilizing or immo[illegible] the cellulase. The cellulase component may be immobilized by inco[illegible] into a gel, by the formation of stable or temporary aggregates wit[illegible] increased mol. mass, by rapid immobilization of cellulase protein on ins[illegible] components, by rapid autoimmobilization of the cellulase protein, [illegible] adsorption to an insol. [illegible] sol. carrier. The carrier is preferably [illegible] cellulose-contg. carrier of fibrous, microcryst., or amorphous stru[illegible], and more preferably a sol. or insol. polymer, esp. a **polysaccharide** capable of interaction with the enzyme via a cellul[illegible] binding domain (CBD) [illegible] catalytic domain, or a sol. polycationic [illegible] deriv. For example, Humicola insolens 43-kDa cellulase (1.6 g[illegible]) [illegible] be autoimmobilized on 100 g/L Avicel (microcryst. cell[illegible]) by incubation in sodium phosphate buffer (0.05M, pH 7.5) at 20.degree. [illegible] min, repeated centrifugation at 4000 rpm for 15 min and 5.degree., [illegible] the moist sediment, and milling. About 50% of the total cell[illegible] autoimmobilized by this procedure, and the immobili[illegible] cellulase retains full activity as "free" cellulase. The cellulase pre[illegible] has a much lesser effect or influence on the durability or aging beha[illegible] the cellulosic substrate than corresponding unmodified cellulases [illegible] least having as good an effect on the look or feel, when used f[illegible] treatment of cellulosic fabrics or textiles. The cellulase prep[illegible] be used for domestic or industrial laundering or fabric softeni[illegible] ingredient of a detergent compn., for bio-polishing, or for stone-w[illegible] denim fabric [illegible] denim jeans or other dyed fabric or garments.

L[illegible] ANSWER [illegible] ON STN [illegible]

AN [illegible]
TI A **polysaccharide** hydrogel material, its preparation [illegible]
[illegible], drug, [illegible] and [illegible]
IN [illegible], Davide; Valle-Mari, Emiliano
PA [illegible] Polymeric S.P.A., Italy; Bellini, [illegible], Valeria ,
Emiliano
SO EP Int. Appl., [illegible] pp.
[illegible]
DT Patent
LA English
FAN.CNT [illegible]

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
[illegible]	A1	[illegible]	[illegible]	[illegible]

W: AL, AM, AT, AU, BB, BG, BR, BY, CA, CH, [illegible], CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, [illegible], MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG

[illegible]	A1	[illegible]	[illegible]

PRAI IT 1996-RM[illegible] 1996 [illegible]
WO 1996-EP[illegible] 1996 [illegible]

AB A **polysaccharide** hydrogel material consisting of a [illegible] matrix
grafted of a functionalized deriv. of **alginic** acid [illegible] acid,
whose **carboxylic** groups are partially **esterified** with an unsatd. aliph. or an araliph. alc., and the [illegible]
carboxylic groups are partially salified with an al[illegible], alk. earth
metal cation or with **tetralkylammonium**. This hydr[illegible] material,
which is crosslinked optionally in presence of [illegible] by treatment
with radiation, UV, [illegible] and gamma rays is useful [illegible] in
medicine, surgery, cosmetics and for the prepn. [illegible] A pharmaceutically acceptable hyaluronic acid allyl tetrabutyl **ester** [illegible] salt was formed and swollen in a drug [illegible] of [illegible] mg/mL.

[illegible]

L[illegible] ACCESSION NUMBER [illegible] HCAPLUS
AN [illegible] HCAPLUS
TI [illegible]
AB [illegible]
[illegible] of polymers from surfaces
IN [illegible]
PA [illegible]
SO [illegible]
CODEN: [illegible]
DT Patent
LA Japanese
FAN.CNT [illegible]

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP [illegible]	A2	1996 [illegible]	JP [illegible]	[illegible]

AB [illegible] comprises Na metal [illegible] , cyclohexanol II , methanol III , xylan, xylose, Na pentothenate IV , Na [illegible] , Na myristate VI , 4-isopropylstipine VII , H2O, Be [illegible] VIII , and 1st-PrOH and optionally contain min. [illegible] **polysaccharides** , and xylans, lactic acids, preservatives, [illegible] , chelating agents, fatty acids, amino acids, and it microorganism [illegible] An aq. soln. contg. 5 * mixt. of I (threo:25, xylan [illegible] , xy [illegible] , glucose [illegible] , III [illegible] , VII [illegible] , IV [illegible] , [illegible] , VI [illegible] , 1 * VIII, and [illegible] * 1st-PrOH exhibited good polymer release properties on [illegible] by applying a polymer coating on a metal surface with [illegible] in. for 5-1 min at room temp.

AN [illegible]

TI [illegible] **polysaccharides** [illegible]

IN [illegible]; [illegible]; [illegible]; [illegible]

PA [illegible] Specialty Materials [illegible], USA

SO Brit. Pat. Appl., 17 pp.

CODEN: BAXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP [illegible]	A1	1994 [illegible]	EP 1993-[illegible]	[illegible]
	R: BE, CH, DE, ES, FR, GB, IT, LI, NL, SE				
	[illegible]	A	1994 [illegible]	[illegible]	[illegible]
	[illegible]	AA	1994 [illegible]	[illegible]	[illegible]
	[illegible]	A1	1994 [illegible]	[illegible]	[illegible]
	[illegible]	A1	1994 [illegible]	[illegible]	[illegible]
	[illegible]	A1	1994 [illegible]	[illegible]	[illegible]
	[illegible]	A	1994 [illegible]	[illegible]	[illegible]
PRAI	[illegible]		1994 [illegible]		
	[illegible]		1994 [illegible]		

AB Absorbent materials comprise cross-linked **polysaccharides**. Thus, [illegible] g guar gum xylmethyl was dissolved in [illegible] deionized water, then [illegible] mL of a soln. of zirconium sodium lactate was added thereto and the mixt. was then dried. The absorption capacity of the powder was 47.8 g/g.

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L44 ANSWER 17 OF 17 HCAPLUS COPYRIGHT ... ACS
AN ... HCAPLUS
DN ...
TI Foam-applied ... agents, their manufacture ... , and fire ... [
... ... surfactants and ... alkanol ... fluor- ... alkyl ...
... (Unilever ...
IN ... Swan, Sir ... Ward
PA ... Ltd., GB
SO ... Brit. UK Pat. Appl., ... pp.
... CODEN: BAXXDU
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB ...	A1	19...	GB 19...	...

...

MI ... 14-C7H15CH2CH2 ... SN—

O O I

AB The ... agents have general formula R1(OCH2CH2)nR2H (R1 = ... R1 = straight ... branched chain, C11-...-alkyl, C12-C...-alkylC6H4O, ... R1-(C2H4-alkyl)Ph; n = ..., 20, 30 ... 80; R2 = 5- ... 6-membered satd. ... ... ly satd. heterocyclic ring, optionally ... substituted. ... and, optionally, substituted with ... electrolytes. ... ingredients; the ... contain 1-8 ... and form stable foams with greatly ... quantities of additives, e.g., stabilizers and foam boosters. The ... agent may have formula I. The foaming agents are manufd. by ... a compd. having general formula R1(OCH2CH2)nR2H with a compd. ... general formula R3H. The foam compns. are used for extinguishing ... fires and blanketing toxic materials. A foam concentrate contained ... ppm. prevented, ... tradecamil-4 ethoxy sulfate 20, Na stearyl ... , ethylene glycol (solvent) 40, NaCl (viscosity modifier) 1, ... Cellulose Na salt (stabilizer) 1, soln. starch (stabilizer) 5, polyvinyl ... (solvent) 1, ... stearate (stabilizer) 5, propane-1-ol (solvent) ..., ...-dihydroxybiphenyl (preservative) ...1, polyvinyl pyrrolidone (preservative) ..., MgSO4 (viscosity modifier) 1.5, NH4HCO3 (buffer) 1.5, NH4 ... (buffer) 0.5, Na stearate (stabilizer) 1, phenolphthalein (color) ..., ... gamma.-butyrolactone (stabilizer) 0.4%, and ... ester 100 ppm. A spontaneously foaming compn. contained the above ... , octafluorocyclobutane 5, decafluorobutane 10, and ... %.

L[illegible] ANSWER [illegible] OF [illegible] HEALTHS COPYRIGHT [illegible] ACS
AN [illegible]
TI [illegible]
[illegible]
[illegible]
AU [illegible]
[illegible]
SO [illegible]
[illegible]
DT [illegible]
LA English
AB Li, Na, K, and **NH4** salts of the industrial **polysaccharide** gellan (I) were prepd. The salts were freely sol. in water at room temp. (25 degrees). The spontaneously held gel (obtained on cooling to 10 degrees) was necessary for complete gelation in the presence of mono- or multivalent cations. The gel, on heating, then melted at 80 degrees. These solns. were stable to the properties imparted upon gelation by the presence of cations. The relative gel str. in the gellan-cation salts was Mg > Ca > Sr > Li > Na > K > **NH4**, a function of the interaction of cation with over one-third of the I **carboxyl** groups. Purifn. was rapid and included sequential treatments with a cation-exchange H+ resin, LiOH, NaOH, KOH, or NH4 OH, and an anion-exchange Cl- resin. About 95% of the divalent cations and nearly all of the phosphate that contaminated com. I were removed. The purified monovalent salts of gellan set in the presence of divalent cations and provide well-defined agents for gelation media used in gelation of microbes and plants. In a manner analogous to Na **alginate**, soln. of Li, Na, K, or **NH4** gellanate formed beads when dripped into solns. of divalent cations. This property was exploited for entrapment of enzymes and cells in beads.

[illegible]

AU [illegible]
TI [illegible]
SO [illegible]
[illegible]
[illegible]
IN [illegible]
PA [illegible]
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
[illegible]	A2	[illegible]	[illegible]	[illegible]
[illegible]	B2	[illegible]		

AB The emulsifier field comprises ultra-heavy oils [illegible], water, and surfactants (HLB 14-19) [illegible], hydrophobic natural [illegible] and [illegible] parts. The anionic surfactants are (1) alkali [illegible] salts of phenolic OH group-containing compds., (2) alkylene oxide adducts of HCHO condensates with phenolic OH group-containing compds. having [illegible] condensation degree 1.0-10, (3) alkylene oxide adducts of C6-[illegible] fatty alcs. and/or fatty amines, (4) block or random addn. polymers of ethylene oxide and propylene oxide, and/or butylene oxide, styrene oxide, (5) alkylene oxide adducts of polyvalent alcs. (glycerin, trimethylolpropane, pentaerythritol, etc.) or their **esters** of C6-18 fatty acids, (6) alkylene oxide adducts of multiple active H-containing compds. (ethylenediamine, tetraethylenediamine, polyethylenimine having m.w. [illegible], and/or (7) addn. products of alkylene oxides with mixts. of [illegible] mol triglyceride-type fats, polyvalent alcs., and 0.1-5 mol water. The natural substances are (1) plant-derived **polysaccharides** (e.g., agar, carrageenan, furcellaran, **alginic** acid and its salts, locust-bean gum, guar gum, tara gum, tamarind seed gum, gum arabic, Karaya gum, tragacanth gum, pectin, [illegible] animal-derived proteins (e.g., gelatin, casein, [illegible] bacterial [illegible] derivs. (e.g., cellulose derivs., starch). The fluids may contain anionic surfactants (1) HCHO condensates of lignosulfonic acids or sulfonic acid salts of arom. compds. (naphthalene, [illegible] naphthalene, alkylphenol, alkylbenzene, etc.) having av. HCHO condensation degree 1.0-10; salts of lower amines (**ammonium**, monoethanolamine, diethanolamine, triethanolamine, triethylamine, etc.), alkali metals, alk. earth metals, (2) formalin condensates or copolymers of sulfonic acids (lignosulfonic acid, lignosulfonic acid salts, their [illegible], their salts of lower amines) having av. HCHO condensation degree [illegible], (3) polystyrenesulfonic acid or its salts, or styrenesulfonic acid copolymers, (4) alkylpentadienesulfonic acid polymers or their salts, (5) copolymers of maleic anhydride and/or itaconic anhydride, their [illegible] and salts, and/or (6) [illegible] polybutadiene maleate and their salts.

L [illegible]

AN ACCESSION NUMBER [illegible]

XA [illegible]

TI [illegible]

DC [illegible]

IN [illegible]

PA [illegible]

PN [illegible]

PD [illegible]

AP [illegible]

DR [illegible]

PRAI [illegible]

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO [illegible]	A1	1995 [illegible]	WO 1994-EP [illegible]	[illegible]

DS [illegible]

SC [illegible]

MC [illegible]

AB A protein stabilizer additive comprises two [illegible] of the simple of the formula: (HOCH2)3-C-R, wherein R is: C1-C4 alkyl, [illegible] C1-C4 alkyl, NH2; NR1R2 wherein R1 and R2 may be independently: H, C1-C4 alkyl sulfonate, C1-C4 hydroxyalkyl sulfonate; C1-C4 alkyl [illegible] (CH2OH)3, C1-C4 alkyl, C1-C4 hydroxyalkyl; C1-C4 alkyl **carboxylate**; a polyelectrolyte; a buffer, and one or more addnl. [illegible] for example divalent metal salts. An example of the (HOCH2)3-C-R mono. is 1,1',1"-tris hydroxymethyl ethane. An example of the polyelectrolyte is **alginic** acid. The stabilization of protein enzymes [illegible] Galactose oxidase and glucose oxidase are described.

[illegible]

[illegible] PALMER [illegible] [illegible] HAMELMANN [illegible] STRAIGHT [illegible] AYE
[illegible] [illegible] [illegible] HAMELMANN
[illegible] [illegible]
[illegible] [illegible] [illegible] insulin-[illegible] peptides
[illegible], [illegible], Hawaii; [illegible], Beverly Glen; [illegible], [illegible]; [illegible], [illegible]; [illegible], Pine; Lockett, William Joseph; Hung, Li
[illegible] Inc., USA
[illegible] Pat. Appl., [illegible] pp.
[illegible] CODEN: EPXXDW
Patent
English
PATENT NO. [illegible]

PATENT NO.	KIND	DATE	APPLICATION NO. [illegible]	DATE
EP [illegible]	A1	19941102	EP 1994-[illegible]	[illegible]
EP [illegible]	A3	19950125		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, NL, PT, SE				
[illegible]	A	19941102	[illegible]	[illegible]
AU 9466[illegible]	A1	19941103	AU 1994-66[illegible]	[illegible]
AU 6[illegible]	B2	19971120		
CA 2[illegible]	A	19941016	CA 1994-[illegible]	19940[illegible]
[illegible]	AA	19941[illegible]	[illegible]	[illegible]
[illegible]	A1	19941[illegible]	JP 1994-[illegible]	[illegible]
NZ 2[illegible]	Cl	1999[illegible]	NZ 1994-[illegible]	[illegible]
BR 94[illegible]	A	19941[illegible]	BR 1994-[illegible]	[illegible]
[illegible]	A	19951[illegible]	[illegible]	[illegible]

PRAI US 1993-44[illegible] 19930[illegible]

AB Non-insulin-dependent diabetes mellitus is treated [illegible] oral by prolonged administration of peptide [illegible] of glucagon-like peptide 1 (insulinotropin, PGP-1) and related peptides, esp. in combination with [illegible] polymer matrix, in a water-immiscible oil suspension, in a complex with [illegible] other metals, in a complex with a basic polypeptide (protamine [illegible]), in a liposome delivery system, or after subjection to sonication [illegible] to give amorph. or cryst. material formation (e.g. high shear or exposure to salts) to prolong the release of the peptide. Thus, a soln. [illegible] mg insulinotropin/mL phosphate-buffered saline (PBS) [illegible] with an equal vol. of a soln. of 2.6 mg protamine and 4.4 mg ZnCl2 in PBS to give a milky suspension.

L4 ANSWER [illegible] HCAPLUS COPYRIGHT [illegible] ACS
AN [illegible] HCAPLUS
DN [illegible]
TI [illegible]
IN Sato, Ryoki; Takama, Mitsuru; Abe, Koji
PA Data K.K., Japan
SO Jpn. Kokai Tokkyo Koho, 15 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
[illegible]	A2	[illegible]	[illegible]	[illegible]

AB Water-insol. particles having polyelectrolyte layers on their surfaces are used for immunoassay to reduce non-specific interference. The polyelectrolyte can be selected from anionic (carboxyl, sulfo, phosphoni, etc. functional group-cont.) polyelectrolyte or cationic quaternary **ammonium**, etc. functional group-cont. polyelectrolyte. In example, different combination of anionic and cationic polyelectrolyte were used as carrier for immunoassay of .alpha.-fetoprotein or .alpha.1-antichymotrypsin.

[illegible]

L[illegible] ANSWER [illegible] OF [illegible] (COPYRIGHT [illegible] ACS
AN [illegible]
TI [illegible]
IN [illegible]
PA [illegible]
SO [illegible]
DT [illegible]
LA [illegible]
FAN.CNT [illegible]

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	[illegible]	A1	[illegible]	WO [illegible]	[illegible]
	RW: AT, BE, BG, BX, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, [illegible], MC, NL, PT, SE,				
	AU [illegible]	A1	[illegible]	AU [illegible]	[illegible]
	AU 669147	B2	[illegible]		
	EP 617[illegible]	A1	[illegible]	EP [illegible]	[illegible]
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, [illegible], MC, NL, PT, SE				
	HU [illegible]	A2	[illegible]	HU [illegible]	[illegible]
	HU [illegible]	B	[illegible]		
	JP [illegible]	C2	[illegible]	JP [illegible]	[illegible]
	A [illegible]	B1	[illegible]	AT [illegible]	[illegible]
	FI [illegible]	A	[illegible]	FI [illegible]	[illegible]
	NO [illegible]	A	[illegible]	NO [illegible]	[illegible]
PRAI	IT [illegible]	[illegible]			
	WO [illegible]	[illegible]			

AB Biomaterials are disclosed which are comprised of a [illegible] able, biocompatible, and biodegradable nonwoven fabric made [illegible]. The nonwoven fabric materials are comprised of threads imbedded in a matrix; both matrix and threads can be comprised of hyaluronic acid **esters**, salts, or in combination with **esters** of **alginic** acid or other polymers. The fabric can be used for tissue augmentation, surgery, etc. Prepn. of a variety of hyaluronic acid **esters** is described, as is manuf. of the fabric. A nonwoven web of hyaluronic acid benzyl **ester** was impregnated with vancomycin.

[illegible]

AN [illegible]

AU [illegible]

TI [illegible] **polysaccharide esters** [illegible]

SO [illegible]

IN [illegible]

PA [illegible]

SO [illegible]

[illegible]

IT [illegible]

LA [illegible]

PAN.CNT [illegible]

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
[illegible]	A1	[illegible]	[illegible]	[illegible]
[illegible]	A1	[illegible]	[illegible]	[illegible]
[illegible]	A1	[illegible]	[illegible]	[illegible]
[illegible]	A	[illegible]	[illegible]	[illegible]

PRAI [illegible]

AB [illegible] **esters** of acidic **polysaccharides**, such as [illegible], **alginic** acid, and CM cellulose, are [illegible] inhibitors and gastroprotective agents. **Alginic** acid [illegible] **ester** It was orally administered to rats [illegible] ulcerogenic activity of [illegible] dose-dependent and its efficacy was greater than that of sucralfate. [illegible] to mix with water before use comprised granules cmty. [illegible] and Na CMC 45., colloidal silica 10, talc 30, aspartame 2., flavor [illegible], and glucose to 150 mg.

[illegible]

[illegible]

[illegible]
[illegible]
[illegible] **ammonium** [illegible]
[illegible]
IN [illegible], [illegible] Edward; [illegible], William [illegible]
PA Pfizer Inc., USA
SO PCT Int. Appl., 41 pp.
[illegible]
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	W[illegible]	A1	[illegible]	W[illegible]	[illegible]16
	W: [illegible], FI, [illegible]				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, [illegible]				
	CA [illegible]	AA	[illegible]	CA [illegible]	[illegible]16
	CA [illegible]	[illegible]	[illegible]		
	EP 581176	A1	[illegible]	EP 1991-[illegible]	[illegible]16
	EP 581176	B1	[illegible]		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, [illegible], [illegible], SE				
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]		
	AT [illegible]	E	[illegible]	AT 1991-[illegible]	[illegible]16
	ES [illegible]	T3	[illegible]	ES 1991-[illegible]	[illegible]16

PRAI [illegible]
WO 1991-US[illegible] 1991[illegible]16
AB The title salts, water-sol. and lacking side effects (e.g. [illegible]intestinal and cell cytotoxicity), are (prepared by) [illegible]-.beta.-hydroxyalkyl ethers of chitosan and [illegible] physiol. acceptable water-sol. polyanions.. In-vivo assays in hamsters are described.

(12) ...

(54) ... RHEOLOGY ... PYRAIGHT ... AND

(57) ...

(71) ...

(72) ...

(74) ...

(81) ...

Published ...

With ...

(88) ...

(30) PRIORITY DATA:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4[illegible]	A	19[illegible]	US 19[illegible]	[illegible]
US 4[illegible]	A	19[illegible]		
US 4[illegible]	A1	19[illegible]		

(51) Int. Cl.: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, [illegible], NL, SE

US 4[illegible]	A	19[illegible]	US 19[illegible]	[illegible]
AT 3[illegible]	B	19[illegible]	AT 19[illegible]	[illegible]
CA 1[illegible]	AA	19[illegible]	CA 19[illegible]	[illegible]
AU [illegible]	A1	19[illegible]	AU 19[illegible]	[illegible]
AT [illegible]	B1	19[illegible]		
NZ 1[illegible]	A	19[illegible]	CN 19[illegible]	[illegible]
JP [illegible]	A1	19[illegible]	JP 19[illegible]	[illegible]
BR [illegible]	A	19[illegible]	BR 19[illegible]	[illegible]

[illegible] US 19[illegible]

US 19[illegible]

(57) Disclosed is a unique vehicle system which provides [illegible] durable theil. [illegible] properties formulated therewith, enhanced dispersion [illegible] actives therein, and improved deposition of actives therefrom. This vehicle system comprises a primary thickening agent which is a nonionic long-[illegible] alkylated water-soil. polymer, and a secondary thickening agent [illegible] is a water-soil. [illegible] ...ifiant, dispersed in a compatible solvent. [illegible], a chelating aid, which is a chelating agent may be included in the [illegible] system. Also, [illegible] ...ficially, a distributing aid, which is a water-[illegible] ...ther of ...ether [illegible] ...ol. ... structuring linid character may be [illegible] ... the vehicle [illegible].

L[illegible] ANSWER [illegible] OF [illegible] HARRIS COPYRIGHT [illegible] ACS
AN [illegible] HCAPLUS
DN [illegible]
TI **Polysaccharide** [illegible] formed in place
IN [illegible], James B.
PA Minnesota Mining and Mfg. Co., USA
SO Brit. Pat. Appl., 6 pp.
CODEN: BAXXDW
DT Patent
LA English
FAN.CNT [illegible]

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI [illegible]	A2	[illegible]	EP [illegible]	[illegible]
EP [illegible]	A3	[illegible]		
EP [illegible]	B1	[illegible]		
R: DE, FR, GB, NL				
US [illegible]	A	19911105	US [illegible]	[illegible]
JP [illegible]	AA	[illegible]	JP [illegible]	[illegible]
JP [illegible]	A2	[illegible]	JP [illegible]	[illegible]

PRAI US 1990-[illegible]164 1990.124

AB Foamed and nonfoamed title gels are prepd. by mixing [illegible] COLH group-bearing **polysaccharides** contg. suspended di- [illegible] valent metal salts with aq. acids forming H2O-sol. products from these salts, and metal ions which complex with COLH groups. Thus, [illegible] suspension of [illegible] solid CaCO3 in [illegible] 4.5% aq. Na **alginate** [illegible] with [illegible] 5.4% AcOH in a double-barrel syringe assembly [illegible] 12-element mixing tip to give a slightly foamed, homogeneous [illegible] approx.1 min.

[illegible]

[illegible] ANSWER [illegible] RETRIEVE [illegible] ON STN

[illegible] L1 [illegible] RETRIEVE

[illegible] 1

[illegible] Self-sanitizing polyelectrolyte films and sanitizer [illegible] [illegible] quaternary **ammonium** compounds and carboxy group-containing polymers

[illegible] MacDonald, James A.; Brownawell, Richard B.

[illegible] Ecolab, Inc., USA

[illegible] [illegible], [illegible] pp.

[illegible] CODEN: [illegible]

[illegible] Patent

[illegible] English

[illegible] 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
[illegible]	A	[illegible]	[illegible]	[illegible]

[illegible] Self-sanitizing films are formed in a surface from a film-forming polyelectrolyte complex by: 1) forming a finely divided dispersion of an aq. polymeric **ammonium** salt and a [illegible] aq. polymeric carboxy-containing polymer with acid functionalities; [illegible] the dispersion to the surface to form a sanitizing film; and [illegible] exposing the film to the environment to provide polymeric salts. [illegible] An aq. polymer dispn. was prepd. from 1:3 40% active itaconic acid-[illegible] acid copolymer and water to [illegible] and sufficient dil. NaOH was added until the pH was 4.5. A soln. of an 8.4% active alkyldimethylbenzyl **ammonium** chloride was dild. with water to [illegible] prepd. Polyester fabric squares were allowed to air dry and were sprayed with 4-mL soln. were allowed to air dry and were sprayed with water at 1.5 kg/cm2 for 6 min. After 2 h, these tiles were inoculated with [illegible] the sprayed tiles, and the no. of surviving bacteria were evaluated. The av. bacterial reduction was 5.5, compared to [illegible]. This is sufficient for use in sanitization in conjunction with [illegible] preps.

[illegible] [illegible] [illegible]

[illegible]

L[illegible]
AN [illegible]
TI [illegible]
IN [illegible]
PA [illegible]
SO [illegible]
DT [illegible]
LA [illegible]
CC [illegible]

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
[illegible]	A1	[illegible]	[illegible]	[illegible]
[illegible]	B1	[illegible]		

DS [illegible]
[illegible]
[illegible]

AB [illegible] fire-suppressing compns. are prepd. [illegible] typically milled [illegible], a carboxy polymer, a gelling agent, and an **NH4** salt [illegible]. The polymer is [illegible] polymer, **polysaccharide**, polyacrylamide, or a synthetic [illegible] having pendant free **carboxyl** groups is functional [illegible]. Neither the free acid in amts. sufficient for [illegible] of the comp. nor the **NH4** salt [illegible] is individually a suitable fire-retardant at low temps. as well as fire-extinguishing powders and pressurizing gases. Thus, a compn. comprising $NH_4H_2PO_4$ 47.5, Carbopol 941 4.5, $CBrClF_2$ 44., and $CBrF_3$ 11.0% required 216 g to [illegible] a 5-ft2 heptane fire in a std. test.

[illegible]

AN [illegible] HCAPLUS [illegible] ACS
AU [illegible] HCAPLUS
TI [illegible]
IT Microcapsules with permeable or semipermeable walls [illegible]
IN [illegible]; Brito, Leif-Gerhard; Mueller, Klaus
PA Akademie der Wissenschaften der DDR, Fed. Rep. Ger.
SO [illegible] Eur. Pat. Appl., 15 pp. Avail.: Pat. Eur. Pat. Off., [illegible]
[illegible] DENTA
LA [illegible]
FAN.CNT [illegible]

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP [illegible]	A1	[illegible]	EP [illegible]	[illegible]
EP [illegible]	B1	[illegible]	EP [illegible]	[illegible]
[illegible]	[illegible]	[illegible]		

PRAI [illegible]
AB Capsule walls are formed by ppts. of anionic and [illegible] polyelectrolytes at their interface. The anionic polyelectrolytes [illegible] are **carboxylate** group- or **polysaccharide** and its synthetic polymers, and the cationic polyelectrolytes include [illegible] **ammonium** surfactants and/or dyes. The microcapsules [illegible] are used for enzyme processes in preparative and anal. chem., [illegible] chem., and in pharmacy, medicine, and agrichem. and food industries. Thus, [illegible] g Na-alginate (I) (5-11-6) with a degree of substitution of 0.4 was allowed to react in 0.5 N H_2O, and the soln. was pressed through a 0.3-mm inner diam. capillary and dripped from a height of 30 mm into a stirred bath [illegible] 1% aq. methylene blue (II) (1-4). After 1 [illegible] the capsules formed were decanted and washed with H_2O. The deep-blue [illegible] had a diam. of 1-5 mm.

L... ANSWER 4 ... [illegible]

AU ... [illegible]

TI ... [illegible]

IT ... **polysaccharides**

SO ... pp., Japan.

... Kokai Tokkyo Koho, ... pp.

... JPXXAF

... Patent

... Japanese

... NT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP [illegible]	A2	19[illegible]	JP 19[illegible]	[illegible]
JP [illegible]	B4	19[illegible]		

AB Hair preps. that provide luster and elasticity in ... contain **polysaccharides**, cationic surfactants, and high mol. wt. ... The **polysaccharides** are hyaluronic acid [9004-61-9], chondroitinsulfuric acid [9007-28-7], **alginic** acid [9005-32-7], and alkylene glycol **alginates**, and the ... ants are selected from (1) (NR1R2R3R4)+ X1- (R1, R2, R3, ... R4 = C4-22 alkyl C4-22 hydroxyalkyl, C1-3 alkyl, C1-3 hydroxyalkyl, ... benzyl; X1 = halogen, Me sulfate, or Et sulfate), (2) (NR5R6R7 ... H)+ X2- (R5, R6, and R7 = C4-22 alkyl, Me, Et, or hydroxyethyl; ... ; X2 = halogen, Me sulfate, or Et sulfate), and (3) ... (R8 = C14-22 ... alkyl ... The ... preps. comprises hyaluronic acid ... wt. %, ..., **stearyltrimethylammonium** chloride ... , a mixt. of cetyl alc. [36653-82-4] and stearyl alc. ...), ... , a hydroxyethylene stearyl ether ..., propylene glycol ..., and H2O to ... wt.

L1 1 1:1 abs 1-5, 6,11,12,14-21,26,27,38-41

L1 ANSWER 6 OF 45 USPATFULL
AN 1999:114444 USPATFULL
TI Aqueous viscoelastic surfactant solutions for the skin and hair
IN Brodt, Dieter, Haltern, Germany, Federal Republic of
PA Henkel Kommanditgesellschaft, Muel, Germany, Federal Republic of (non-U.S. corporation)
PI US 5994444 19991130
AI US 1997-908866 19970811 (8)
RLI Continuation of Ser. No. US 1996-641116, filed on 1 May 1996, now abandoned
PRAI DE 1994-4416566 19940511
DT Utility
EXNAM Primary Examiner: Gupta, Yogendra; Assistant Examiner: Lukton, John R.
LREP Oblon, Spivak, McClelland, Maier & Neustadt, P.C.
CLMN Number of Claims: 11
ECL Exemplary Claim: 1
DRWN 1 Drawing Figure(s); 1 Drawing Page(s)
LN.CNT 1114
AB Aqueous, viscoelastic surfactant solutions for the care and of hair and skin which contain:

A from 4 to 25% by weight of an anionic surfactant;

B from 0 to 10% by weight of a betainic surfactant;

C from 0 to 10% by weight of a nonionic surfactant;

D from 0 to 6% by weight of an electrolyte;

E from 0 to 5% by weight of a water-soluble pH regulating; and

F from 0 to 5% by weight of a further constituent in which the sum of the amounts of (A), (B), and (C) is at least 10% by weight and the sum of the amounts of (C), (D), and (E) is between 2 and 45% by weight, in each case based on the total weight of the aqueous solution, and having a shear modulus, G'(omega), between 5 and 500 Pa in a plateau between 0.1 and 40 degrees/s and a pH of from 4 to 8, and in which the conditions for the identity of the storage modulus, G', and the loss modulus, G", are in the angular frequency range from 0.1 and 600 rad/s.multidot.s.sup.-1, exhibit optimum flow behavior for the intended applications.

AB INDEXING IS AVAILABLE FOR THIS PATENT.

L1 ANSWER 11 OF 45 USPATFULL
AN 1999:43984 USPATFULL
TI Preparation of lactams from **aliphatic** .alpha.,.omega.-dinitriles
IN Di Drusco, Robert, Brookland, DE, United States
Fallon, Robert Donald, Elkton, MD, United States
Jarvian, John Edward, Wilmington, DE, United States
Herkes, Frank Edward, Wilmington, DE, United States
PA E. I. du Pont de Nemours and Company, Wilmington, DE, United States (U.S. corporation)
PI US 5896-66 19990406
AI US 1996-66 19960501 (8)
DT Utility
EXNAM Primary Examiner: Billing, Herbert J.
CLMN Number of Claims: 6
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 1144
AB INDEXING IS AVAILABLE FOR THIS PATENT.
AB Aqueous media for the preparation of five-membered ring unsaturated lactams from **aliphatic** .alpha.,.omega.-dinitriles are disclosed. In the process an **aliphatic** .alpha.,.omega.-

nitrile is first [illegible] to an ammonium salt [illegible] [illegible]-nitrilecarboxylic acid in aqueous [illegible] catalyst having an **aliphatic** nitrilase [illegible] activity [illegible] [illegible] nitrile hydratase EC 4.2.1.84 [illegible] activities. The ammonium salt of the [illegible] acid is then converted directly to the [illegible] by hydrogenation in aqueous solution, without isolation of the intermediate [illegible]-nitrilecarboxylic acid [illegible] acid. When the **aliphatic** .alpha.,.omega.-dinitrile is also unsymmetrically substituted at the .alpha.-carbon atom, the nitrilase produces the .omega.-nitrilecarboxylic acid ammonium salt resulting from hydrolysis of the .omega.-nitrile group with greater than [illegible] selectivity, thereby producing only one of the two possible [illegible] products during the subsequent hydrogenation. A heat-treatment [illegible] select for [illegible] nitrilase [illegible] nitrile hydratase [illegible] activities while destroying undesirable activities is also provided.

TA[illegible] INDEXING IS AVAILABLE FOR THIS PATENT.

L[illegible] ANSWER 1[illegible] OF 45 USPATFULL
AN [illegible] USPATFULL
TI Non-woven fabric material comprising auto-crosslinked hyaluronic acid derivatives
IN [illegible], Franco, Via Segantini [illegible], [illegible] Davis, [illegible], Italy
[illegible], Lanfranco, Via Bravi, [illegible], [illegible] Ponte [illegible], Padova, Italy
[illegible], Aurelio, Viale Ippocrate, [illegible], [illegible] Rome, [illegible]
PI US [illegible] [illegible]
AI US 1995-4[illegible] [illegible] (6)
RLI Continuation-in-part of Ser. No. US 199[illegible], filed on 1[illegible] Dec 1992, now patented, Pat. No. US 55[illegible]916
PRAI IT 1991-PD229 1991121[illegible]
DT Utility
EXNAM Primary Examiner: Webman, Edward J.
LREP Birch, Stewart, Kolasch & Birch, LLP
CLMN Number of Claims: [illegible]
ECL Exemplary Claim: 1
DRWN [illegible] Drawing Figure(s); [illegible] Drawing Page(s)
LN.CNT [illegible]
TA[illegible] INDEXING IS AVAILABLE FOR THIS PATENT.
AB Biomaterials are disclosed comprised of biodegradable, biocompatible, and bioabsorbable non-woven fabric materials for use in **surgery** for the guided regeneration of tissues. The non-woven fabric materials constitute threads embedded in a matrix, wherein [illegible] the matrix and the threads constitute auto-crosslinked hyaluronic acid.

TA[illegible] INDEXING IS AVAILABLE FOR THIS PATENT.

L[illegible] ANSWER 14 OF 45 USPATFULL
AN 1998:6[illegible] USPATFULL
TI Coated papers
IN Malhotra, Shadi L., Mississauga, Canada
PA Xerox Corporation, Stamford, CT, United States (U.S. corporation)
PI US [illegible] [illegible]
AI US 1996-656[illegible] 1996[illegible]
DT Utility
EXNAM Primary Examiner: Schwartz, [illegible] R.
LREP [illegible], E. O.
CLMN Number of Claims: [illegible]
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT [illegible]
TA[illegible] INDEXING IS AVAILABLE FOR THIS PATENT.
AB Disclosed is a coated paper which comprises [illegible] substrate; [illegible] hydrophobic barrier layer comprised of a water [illegible] component and a water or alcohol soluble antcurl agent, said hydrophobic barrier layer being present on [illegible] of the substrate; [illegible] receiving [illegible] situated on the top of both hydrophobic [illegible] layers, said [illegible] receiving [illegible] being suitable for [illegible], said [illegible] comprised [illegible] polymer [illegible], [illegible]

[illegible] formation, [illegible] a pigment, [illegible] a plasticizer, and [illegible] a pigment. In another embodiment, the pigment [illegible] a pigment [illegible] a pigment which [illegible] a substrate; [illegible] a pigment [illegible] a water insoluble compound, [illegible] a pigment [illegible] a pigment, and [illegible] a pigment. In another embodiment [illegible] a pigment [illegible] a pigment; [illegible] a pigment [illegible] a pigment [illegible] a pigment, and [illegible] a pigment, and [illegible] a pigment.

'A. INDEXING IS AVAILABLE FOR THIS PATENT.

L [illegible] ANSWER 15 OF 48 USPATFULL
AN [illegible] USPATFULL
TI [illegible] polysaccharides
IN [illegible], Italy
[illegible], Italy
PA [illegible] S.p.A., Arezzo, Italy (non-U.S. [illegible])
PI [illegible]
AI [illegible]
RLI [illegible] Ser. No. US 1989-[illegible], filed on [illegible], which is a continuation of Ser. No. US 1989-[illegible], filed on [illegible], now abandoned
PRAI [illegible]
DT Utility
EXNAM Primary Examiner: [illegible], Elli
LREP [illegible], Stewart, Kolasch & Birch, LLP
CLMN Number of Claims: 69
ECL Exemplary Claim: 1,48
DRWN [illegible] Drawing
LN.CNT [illegible]
'A. INDEXING IS AVAILABLE FOR THIS PATENT.
AB Inner and/or intramolecular cross-linked esters of acid polysaccharides are disclosed in which a part or all of the carboxyl groups are esterified with hydroxyl groups of the same molecule or of different molecules of the acid polysaccharide. These inner and/or cross-linked esters of polysaccharide acids are useful in the field of [illegible] plastic materials, to manufacture sanitary and **surgical** [illegible], in the cosmetic and pharmaceutical fields, in the food industry and in many other industrial fields.

'A. INDEXING IS AVAILABLE FOR THIS PATENT.

L [illegible] ANSWER 16 OF 48 USPATFULL
AN [illegible] USPATFULL
TI Composite membranes for the guided regeneration [illegible]
IN Brigatti, Franco, Lavis, Italy
Gallegati, Gianfranco, Ponte di Brenta, Italy
Romeo, Aurelio, Rome, Italy
PA M.U.R.S.T. (Italian Ministry for Universities and [illegible] Scientific and Technological Research), Rome, Italy (non-U.S. [illegible])
PI [illegible]
AI [illegible]
RLI [illegible]
PRAI [illegible]
DT Utility
EXNAM Primary Examiner: Weakley, Edward J.
LREP Brinks, Stewart, Kolasch & Birch, LLP
CLMN Number of Claims: [illegible]
ECL Exemplary Claim: 1
DRWN 4 Drawing Figure s.; 4 Drawing Pages
LN.CNT 1449
'A. INDEXING IS AVAILABLE FOR THIS PATENT.
AB Bi materials are disclosed comprised of biodegradable, biocompatible, and bioabsorbable composite membranes for use in **surgery** for guided regeneration of tissues. The composite membranes are comprised of threads embedded in a matrix, wherein the matrix and the threads comprise [illegible] of esters of hyaluronic acid, [illegible] with [illegible], [illegible] of hyaluronic acid [illegible] with

... : **alginic** ... : ... & Lyman ...

'YA' INDEXING IS AVAILABLE FOR THIS PATENT.

L... ANSWER ... OF ... USPATFULL
AN ... '...:...' USPATFULL
TI ... Preparation of hyaluronic acid ... with ... of pharmaceutical ... for ... application
IN ... Rome, Italy
... Lenhoff, Stevens, Padua, Italy
PA ... Fidia S.p.A., Abano Terme, Italy (non-U.S. corporation)
PI ... US ...,...,...
AI ... US ...,...,... ...
RLI ... Continuation of Ser. No. US ...,...,..., filed on ... ..., now ...
PRAI ... IT ...-... ... ...
DT ... Utility
EXNAM ... Primary Examiner: Fitzmaurice, Mary C.; Assistant Examiner: ..., Kathleen ...
LREP ... Bacon, Stewart, Pearne & Birch, ...
CLMN ... Number of Claims: ...
ECL ... Exemplary Claim: 1
DRWN ... No Drawings
... ...
'YA' INDEXING IS AVAILABLE FOR THIS PATENT.
AB ... A highly pure fraction of hyaluronic acid is disclosed which is non-inflammatory and avoids post-operative complications in ... surgery. Also disclosed is a process for the preparation of hyaluronic acid characterized by converting hyaluronic acid or ... into corresponding quaternary ammonium salt and, following purification ... recovering the quaternary ammonium salt into ... salt of hyaluronic acid.

'YA' INDEXING IS AVAILABLE FOR THIS PATENT.

L... ANSWER ... OF ... USPATFULL
AN ... ...:...-... USPATFULL
TI ... Non-woven fabric material comprising hyaluronic ... derivatives
IN ... Brigatti, Franco, Trento, Italy
... Valleggi, Gualtiero, Padua, Italy
... Arnaz, Aurelio, Rome, Italy
PA ... M.U.R.S.T. (Italian Ministry for Universities and ... and Technological Research, Rome, Italy (non-U.S. ...))
PI ... US ...,...,...
AI ... US ...-...-... ... (...)
PRAI ... IT ...-... ...
DT ... Utility
EXNAM ... Primary Examiner: Webman, Edward J.
LREP ... Birch, Stewart, Kolasch & Birch
CLMN ... Number of Claims: ...
ECL ... Exemplary Claim: 1
DRWN ... ... Drawing Figure(s); ... Drawing Page(s)
... ...
'YA' INDEXING IS AVAILABLE FOR THIS PATENT.
AB ... Biomaterials are disclosed comprised of biodegradable, biocompatible, and porous textile non-woven fabric materials for ... **surgery** for the guided regeneration of tissues. The non-woven fabric materials are comprised of threads embedded in a matrix, with the matrix and the threads can be comprised of esters of hyaluronic acid, used singly or in combination, or esters of hyaluronic acid in combination with esters of **alginic** acid or other polymers.

'YA' INDEXING IS AVAILABLE FOR THIS PATENT.

L... ANSWER ... OF ... USPATFULL
AN ... ...:... USPATFULL
TI ... Hyaluronic acid esters
IN ... Della Valle, Francesco, Padua, Italy
... Arnaz, Aurelio, Rome, Italy
PA ... Fidia, S.p.A., Abano Terme, Italy (non-U.S. ...)

L... ... ...
'... INDEXING IS AVAILABLE FOR THIS PATENT.
AB ... T...l and partial methyl ... of **alginic** ... which ... ...
... important as plastic and pharmaceutical ... ... useful in
... ... fields including medical, **surgical**, ...
f...ms.

'... INDEXING IS AVAILABLE ... THIS PATENT.

L... ANSWER ... OF 45 USPATFULL
AN ... ...:...8 USPATFULL
TI ... Sulfonated polysaccharide derivatives with hypolipidemic activity
IN ... Conti, Franco, Milan, Italy
PA ... Etablissement Texcontor, Liechtenstein, Italy (non-U.S. corporation)
PI ... US ... ...
AI ... US ...-...,... ... ...
RLI ... Continuation of Ser. No. US ...-...,..., filed on ... ..., now
... ...
PRAI ... IT ...-... ... ...
DT ... Utility
EXNAM Primary Examiner: Griffin, Ronald W.; Assistant Examiner: White, Everett
LREP ... Fairhurst, Wendel & Rossi
CLMN ... Number of Claims: ...
ECL ... Exemplary Claim: 1
DRWN ... No Drawings
LN.CNT ...
'... INDEXING IS AVAILABLE FOR THIS PATENT.
AB ... Sulfonated derivatives of natural polysaccharides ... a polyglucoside
... structure with ...-... monomer units and one or ... ... chains bonded
... to the glucoside nucleus by a nitrogen or oxygen ... ... an amide group,
... said side chains having one or more quaternary ... ... atoms so that
... each monomer unit has a cationic charge density ex... ... two. The new
... compounds are particularly active as hypocholest... ... agents.

'... INDEXING IS AVAILABLE FOR THIS PATENT.

L... ANSWER ... OF 45 USPATFULL
AN ... ...:...7 USPATFULL
TI ... Biphenyl derivative composition for nerve cell ... ... repairing or
... preventive agent and process for preparing a phen... ... contained
... in the composition
IN ... Takeda, Tatsuyoshi, Tokushima, Japan
... Sakurai, Yuji, Tokushima, Japan
... Okazaki, Hiroshi, Tokushima, Japan
... Hasegawa, Takashi, Tokushima, Japan
... Fukuyama, Yoshiyasu, Tokushima, Japan
PA ... Otsuka Pharmaceutical Company, Ltd., Tokyo, Japan (non-U.S. corporation)
PI ... US ...,...,... ...
AI ... US ...-...,... ... (...)
PRAI ... JP ...-...,... ...
... JP ...-...,... ...
DT ... Utility
EXNAM Primary Examiner: Gerstl, Robert
LREP ... Sughrue, Mion, Zinn Macpeak & Seas
CLMN ... Number of Claims: ...
ECL ... Exemplary Claim: 1
DRWN ... 4 Drawing Figure s...; 4 Drawing Page s...
LN.CNT ...
'... INDEXING IS AVAILABLE FOR THIS PATENT.
AB ... There is disclosed a biphenyl derivative of the f... ... ##STR1##
... wherein R.sup.1, R.sup.3, R.sup.4, R.sup.5 and R... ... are as defined in
... its salt, a composition for nerve cell degenerat... ... containing it
... as the active ... containing a phenyl derivative ... ... from compounds
... ... 4 and B ... as defined, and a process f... ... a phenyl
... derivative contained in the composition.

'... INDEXING IS AVAILABLE FOR THIS PATENT.

L... ANSWER ... OF 45 USPATFULL
AN ... ...:... USPATFULL

TI Thrombolytic agent
IN Mihara, Hisashi, 1-14-15, Higashimikata, Miyakojima-ku, Miyakaki-ken, Japan
Ishii, Hiroyuki, Miyakaki, Japan
Matsuda, Akira, Fukuoka, Japan
Inokuma, Tadahiko, Nagoya, Japan
PA Amano Pharmaceutical Co., Ltd., Nagoya, Japan (non-U.S. corporation)
Mihara, Hisashi, Miyakaki, Japan (non-U.S. inventor)
PI US 4806348 19890221
AI US 134148 871216 (6)
PRAI JP 1986-317669 19861230
JP 1986-8846 19860121
DT Utility
EXNAM Primary Examiner: Shapiro, Lionel M.
LREP Fitzpatrick & Prince
CLMN Number of Claims: 10
ECL Exemplary Claim: 1
DRWN 4 Drawing Figure(s); 2 Drawing Page(s)
LN.CNT 2414
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention discloses that the tissues of earthworms contain fibrinolytically or thrombolytically active ingredients which can be extracted and purified by a suitable sequence of extraction and purification procedures into the individual active principles including six novel proteases named F-O-HM-48, F-I-1-HM-84, F-I-2-HM-18, F-II-HM-84, F-III-1-HM-87 and F-III-2-HM-87. The [illegible] fractionation of the earthworm extract with an [illegible] ethanol gives five active fractions, the first five of which [illegible] from one of the first mentioned four proteases and the last of which contains the last mentioned two proteases. The disclosure includes [illegible] of the suitable purification methods for the proteases as well as the physico-chemical identification data thereof. Various thrombolytic medicament forms prepared with the novel protease as the effective ingredient are described together with the results of the clinical tests carried out by the oral administration of the novel proteases.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 10 OF 48 USPATFULL
AN 89087476 USPATFULL
TI Stabilization of thickened aqueous fluids
IN Sansell, Lionel S., Hagerstown, MD, United States
PA E. I. Du Pont de Nemours and Company, Wilmington, DE, United States (U.S. corporation)
PI US 4876017 19891024
AI US 1991-415681 19910907 (6)
DT Continuation
RLI Continuation-in-part of Ser. No. US 1991-638738, filed on 16 Jan 1991, now patented, Pat. No. US 4890482
DT Utility
EXNAM Primary Examiner: Guynn, Herbert B.
CLMN Number of Claims: 15
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 361
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Thickeners, preferably galactomannans, in aqueous solutions or slurries, e.g., water gel explosives, oil well drilling fluids, and hydraulic fracturing fluids, are stabilized against thermal degradation by incorporating iodide and/or iodate ions into the solution or slurry. The preferred stabilizer is the iodide or iodate salt of alkali metal or alkaline earth metal iodide, or ammonium or alkyl-substituted ammonium iodide, in the aqueous phase.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 4 OF 48 USPATFULL
AN 91117[illegible] USPATFULL
TI Microcapsules containing viable tissue cells
IN Lim, Franklin, Birmingham, AL, United States

PA [illegible], Needham Heights, MA, United States (U.S. applicability)
[illegible]
[illegible]
[illegible]
[illegible]
Continuation-in-part of Ser. No. US 1978-953413, filed on 23 Oct 1978, now abandoned
Continuation-in-part of Ser. No. US 1977-[illegible], filed on 27 Jun 1977, now abandoned
PT Utility
EXMR Primary Examiner: Naff, David M.
LREP Lahive & Cockfield
CLMS Number of Claims: 22
ECL Exemplary Claim: 1
DRWG 1 Drawing Figure; 1 Drawing Page
LN.CT 481
NO ABSTRACT IS AVAILABLE FOR THIS PATENT.
AB Living cells such as islet of Langerhans cells or hepatocytes are microencapsulated within a spherical semipermeable membrane comprising a polysaccharide having acidic groups cross-linked with a polymer having a molecular weight greater than [illegible]. The cells within the microcapsules are viable, healthy, physiologically active and capable of normal metabolism. The microencapsulated cells are useful for implantation in a mammalian body to provide substances and effect [illegible] of the cells in vivo tissue.

L1 ANSWER 41 OF 45 USPATFULL
AN [illegible] USPATFULL
TI Encapsulation of biological material
IN Lim, Franklin, Richmond, VA, United States
PA Damon Corporation, Needham Heights, MA, United States (U.S. corporation)
PI US 4352883 19820928
AI US 1979-[illegible] 19791030 (6)
RLI Continuation-in-part of Ser. No. US 1978-953413, filed on 23 Oct 1978, now abandoned
PT Utility
EXMR Primary Examiner: Naff, David M.
LREP Fenway & Jenney
CLMS Number of Claims: [illegible]
ECL Exemplary Claim: 1,[illegible]
DRWG 1 Drawing Figure; 1 Drawing Page
LN.CT 861
NO INDEXING IS AVAILABLE FOR THIS PATENT.
AB A core material such as living tissue, individual [illegible], hormones, enzymes or antibodies is encapsulated in a semipermeable membrane that is permeable to small molecules for contact with the core material but is impermeable to potentially deleterious large molecules. Encapsulation may be carried out by suspending the core material in a aqueous medium containing a water soluble gum that can be reversibly gelled, forming the suspension into droplets, contacting the droplets with a **solution** of multivalent cations to **gel** the droplets to discrete, shape-retaining, water insoluble temporary spheres and cross-linking a surface layer of the temporary spheres to provide a semipermeable membrane around the capsules. Optionally, the gel within the membrane may be reliquified by removing multivalent cations from the gel.

L1 ANSWER 42 OF 45 USPATFULL
AN [illegible] USPATFULL
TI Chemical treatments for forest fires
IN Vanderwall, H. Lawrence, Upland, CA, United States
PA Missouri Company, St. Louis, MO, United States (U.S. corporation)
PI US 4351414 19820928
AI US 1979-[illegible] 19790614 (6)
RLI Continuation-in-part of Ser. No. US 1977-[illegible], filed on 26 May 1977, abandoned
PT Utility
EXMR Primary Examiner: Leverich, Richard T.

with the previously mixed [illegible]
An important object of the present invention is to provide [illegible],
especially the **alkyl** [illegible] **ammonium**
salts of the pharmaceutically **ammonium** [illegible],
which **alkyl** [illegible] preferably between [illegible]
of use. It is also to provide therapeutically **ammonium** [illegible]
pharmaceutically **ammonium** salts can be prepared by the [illegible]
salt of the acidic **polysaccharide**, in part [illegible]
esterified, preferably [illegible] with a pharmaceutically [illegible]
[illegible] salt, in aqueous **solution** with a [illegible]
salt has been [illegible] with a pharmaceutically **ammonium** base. The [illegible] alkyl
ammonium [illegible] the **polysaccharide** ester can be
obtained by freeze-drying the [illegible]. These salts [illegible] are stable
in the above-mentioned solvents, [illegible].

The salts of bases used are especially those of **aliphatic**,
alicyclic, cycloaliphatic or heterocyclic amines [illegible] and basic salts
of this type may include [illegible] therapeutically active [illegible] primary,
amines, or from amines with a therapeutic action [illegible] with [illegible] special
consideration should be given to **aliphatic** amines, [illegible]
example, mono-, di- and trialkylamines, with alkyl [illegible] with a maximum
of [illegible] carbon atoms, or alkylalkylamines with the [illegible] of which
atoms in the **aliphatic** part and where alkyl mentioned [illegible]
group possibly substituted by between 1 and 3 hydroxyl [illegible]. All
therapeutically acceptable. [illegible]

[illegible] starting materials for the preparation [illegible]. The
invention especially concerns [illegible] salts [illegible] derivatives
derived from hyaluronic acid, from **alginic** acid, [illegible]
carboxymethylcellulose, from carboxymethylamide [illegible]
carboxymethylchitin.

[illegible] due to the biological origin of the starting substrate, which
permits the new crosslinked substances to be used [illegible] cosmetics,
surgery and **medicine** in general.

[illegible] the one known as "antiinflammatory-NIF-N[illegible] hyaluronate",
described by Balazs in the pamphlet "Healon"--A [illegible] its use in
Ophthalmic **Surgery**--D. Miller & R. Stegmann, eds. [illegible] Wiley &
Sons N.Y. 1983; p.6.

The **alginic** acid to be used to prepare new derivatives may be
obtained by extraction from various natural materials, especially from
algae [illegible] it was gathered, in the origin and [illegible] of the plant. The
main species of brown algae used to obtain **alginic** [illegible] are
for example Macrocystis pyrifera, Laminaria digitata, Laminaria
hyperborea, Laminaria flexicaulis, Laminaria digitata, Ascophyllum
nodosum and Fucus serratus. **Alginic** acid is found [illegible]
algae as a diffuse component of the cell walls in the form of a mixture
of its various alkaline salts, among which [illegible] especially sodium
salt, a mixture known also as **algin**. These salts [illegible] usually
extracted in aqueous conditions with a solution [illegible] carbonate and
from this extract **alginic** acid can be obtained also by
precipitation with an acid, for example a mineral acid such as
hydrochloric acid, or. [illegible]

Alginic acid or alkaline **alginates** can however be
obtained by microbiological methods, for example by [illegible] fermentation with
Pseudomonas aeruginosa or Azotobacter vinelandii, [illegible] or
Pseudomonas mendocina mutants. Preparation of the [illegible] types of
alginic acid is described in literature. For the purposes of the
present invention, purified **alginic** acids or [illegible].

[illegible] above mentioned procedure, it whether [illegible] obtained at the
end of the procedure, the alcohols may belong to the **aliphatic**
, araliphatic, alicyclic or heterocyclic series.

Alcohols of the **aliphatic** series for use as esterifying
compounds are for example those with a maximum [illegible] carbon atoms,
which can be [illegible] two hydroxyl groups, by the groups in
the ions. Of the above groups containing hydroxyls, these
[illegible] preferably be those of **aliphatic** radicals,
alkyl, with a maximum of [illegible] carbon atoms. Glycol may thus be
mentioned in the case [illegible].

Of the former **aliphatic** substituted alcohols, the [illegible]
alkoxides given as examples: methyl alcohol and by [illegible], but of
special importance [illegible].

Of the araliphatic alcohols, special mention [illegible]

[illegible] may [illegible] and in which the **aliphatic** chain [illegible] maximum of 4 [illegible] and in which the [illegible] may be substituted by between 1 and [illegible] alkyl [illegible] atoms, especially by chlorine, bromine, iodine, [illegible]
aliphatic chain may be substituted by [illegible] chosen from the group comprising free amino [illegible]

SUMM [illegible] of the cycl aliphatic or **aliphatic**-cycl [illegible] series may derive from mono or polycyclic carbohydrates, may preferably have a maximum of 34 carbon atoms, may be unsubstituted and may contain one or more substituents, such as those mentioned above for the **aliphatic** alcohols. Of the alcohols derived from [illegible] cyclic carbohydrates, special mention should be made of those with a maximum of. . . .

SUMM **Aliphatic**-cycl aliphatic polycyclic alcohols [illegible] the esters of the present invention are sterols, [illegible] acids and steroids, such as. . . .

SUMM Heterocyclic alcohols may be considered to be derivatives of the above said cycloaliphatic or **aliphatic**-cycl aliphatic alcohols, if their linear or cyclic chains are interrupted by [illegible] or more, for example between one and three [illegible]. . . .

SUMM . . . is greatly prolonged. The pharmacologically [illegible] alcohols with which to esterify such cross-linked products of [illegible] acid are preferably lower **aliphatic** alcohols with a maximum of [illegible] carbon atoms, especially saturated monovalent alcohols, [illegible] ethanol, propyl alcohol, isopropyl alcohol, and. . . .

SUMM . . . esters of these cross-linked products, [illegible] are those deriving from therapeutically inactive alcohols, [illegible] for example saturated or unsaturated **aliphatic** alcohols, [illegible] unsubstituted alcohols of this kind with a straight [illegible] ramified chain, for example with between 1 and. . . . bonds, such as vinyl or allyl alcohols and their condensed derivatives, or polyvalent alcohols, such as glycerine. Also useful are **aliphatic** alcohols, for example those derived from cyclopentane or cyclohexane and [illegible] derivatives substituted by lower alkyl groups, for example [illegible] with between 1 and 4 carbon atoms, especially by methyl groups. Part[illegible] interesting are also esters with cycloaliphatic and **aliphatic**-cycl aliphatic alcohols derived from terpenes, [illegible] those mentioned above and from therapeutically active alcohols, [illegible] are also useful in. . . .

SUMM Extremely important is the use of cross-linked [illegible] based on hyaluronic acid for the manufacture of sanitary [illegible] **surgical** items. The esters of these cross-linked products [illegible] preferably those mentioned above for use in cosmetics.

SUMM . . . systemic effect thanks to transcutaneous [illegible], for example in suppositories. All these applications [illegible] possible both in human and veterinary **medicine**. In human **medicine** [illegible] new medicaments are particularly suitable for [illegible] use. The present invention includes in particular any one of them [illegible]. . . .

SUMM . . . in cross-linking are preferably free [illegible] are esterified with pharmacologically inactive alcohols, for example one of the lower **aliphatic** alcohols mentioned previously. [illegible] cosmetic articles can however also contain groups [illegible] with alcohols which have themselves a cosmetic action. . . .

SUMM An important object of the present invention is [illegible] by sanitary and **surgical** articles, by their manufacturing [illegible] their use. These articles are for example similar [illegible] already known and. . . .

SUMM **Surgical** and sanitary articles of special importance [illegible] those which can be obtained from appropriate solutions [illegible] cross-linked products in organic liquids which are capable of [illegible] into films, sheets and threads to be used in **surgery** as auxiliary [illegible] substitutive articles for the skin in cases of [illegible] damage to this organ, such as burns, or as suture threads in **surgery**. The invention includes particularly these uses and [illegible] procedure for these articles consisting in [illegible]. . . .

SUMM . . . [illegible] acid, especially a dialkylamide [illegible] of an **aliphatic** [illegible] between 1 and [illegible] carbon atoms and deriving from [illegible] with between 1 and [illegible] carbon atoms,. . . .

SUMM . . . solvent which must be miscible with the [illegible] and in

...which the hyaluronic ester is the sodium, magnesium or...
aliphatic ...ic, for example methyl, ethyl, ...

...ester with a ... diol, ...

...ed with a hyaluronic ... wounds
...in **surgery**. The use of such ... therapeutic
...treatment of tendinous ... hyaluronic ..., by
means, ...

...In the preparation of the ... **surgical**
articles, it is possible also to include ... substances
materials in order to improve their mechanical ... properties, such as,
...

...Another application in the fields of **medicine** and
surgery of the cross-linked hyaluronic products is ...
by the preparation of various ... with ... gloves,
sheets, ...

...the skin, with ... **medicine**
... preventive ... The cross-linked ... hyaluronic
acid may be safely used ... without ... drawbacks.

...Part of the applications in the fields of **medicine**
surgery of the new hyaluronic derivatives according to
present invention are preparations made of expanded material,
especially in the form of sponges, for the medication of **wounds**
of various ...

...The above applications of the cross-linked products of hyaluronic
acid have represent the ideal solution for those ... and
surgical articles which are intended to be introduced ... the way
or another into human or animal organisms or ... same
articles, using other cross-linked polysaccharide ... ity to the
invention, such as those mentioned above and especially with ...
alginic acid base. In the same way, the cross-linked
products are broken down in the organism to give ... polysaccharides.
...

...The cross-linked **alginic** acid products, specially ... return
... could be given to industrial and household uses ... articles and
elementary articles and their uses. These, especially ... the form of
cross-linked partial salts, possibly further ... with inert
diluents, such as especially lower **aliphatic** ..., for the
preparation of gels, which can be widely used in ... industry, for
the manufacture of cosmetics, ... fields. A ... property is their
ability to emulsify and to stabilize emulsions. From ... point of view,
too, the **alginic** cross-linked products are important in the
food industry, where they serve in the preparation ... ingredients and for
the stabilization of many drinks such as beer and ... fruit juice, sauces
and syrups. As emulsifiers, **alginic** cross-linked ... products can
be used in the manufacture of polishes, anti-freeze ..., lactices and as
stabilizers in the ceramics and ...

[EX1] Preparation of Cross-Linked **Alginic** Acid

[EX2] 4.17 g of **alginic** acid tetrabutylammonium salt ...
alginic acid obtained from Laminaria hyperborea ... containing
... mEq of a monomeric unit are solubilized in ... of DMSO. ...

[EX3] Preparation of Cross-Linked **Alginic** Acid

[EX4] 4.17 g of **alginic** acid tetrabutylammonium salt (...
alginic acid obtained from Arerophyllum moliscum ... containing ...
... mEq of a monomeric unit are solubilized in ... of DMSO. ...

[EX5] Preparation of Cross-Linked **Alginic** Acid

[EX6] 4.17 g of **alginic** acid tetrabutylammonium salt ...
alginic acid obtained from Macrocystis pyrifera ... containing ...
... mEq of a monomeric unit are solubilized in ... of DMSO. ...

[EX7] Preparation of Cross-Linked **Alginic** Acid

[EX8] 4.17 g of **alginic** acid tetrabutylammonium salt ...
alginic acid obtained from Laminaria hyperborea ... containing ...
... mEq of a monomeric unit are solubilized in ... of DMSO. ...

[EX9] Preparation of Cross-Linked **Alginic** Acid

[EX10] 4.17 g of **alginic** acid tetrabutylammonium salt ...
alginic acid obtained from Macrocystis pyrifera ... containing ...
... mEq of a monomeric unit are solubilized in ... of DMSO. ...

[EX11] Preparation of Cross-Linked **Alginic** Acid

[EX12] ... of hydroxypropylcellulose with a molecular ... 4.17 ... **alginic**

... **alginic** ... ...
... ...
... ...
... ...
[161] Preparation of Cross-linked **Alginic** Acid
[162] 4.17 g of **alginic** acid tetrabutylammonium salt ...
alginic acid obtained from Laminaria hyperborea ... Acid ... mEq of a monomeric unit are solubilized in ... of DMSO. ...
[163] Preparation of the Partial Ethyl Ester of Cross-linked **Alginic** Acid
[164] 4.17 g of **alginic** acid tetrabutylammonium salt ...
alginic acid obtained from Arcophyllum nodosum ... Acid ... mEq of a monomeric unit are solubilized in ... of DMSO. ...
[165] Preparation of the Partial Ethyl Ester of Cross-linked **Alginic** Acid
[166] 4.17 g of **alginic** acid tetrabutylammonium salt ...
alginic acid obtained from Laminaria hyperborea ... Acid ... mEq of a monomeric unit are solubilized in ... of DMSO. ...
[167] Preparation of the Ethyl Ester of Cross-linked **Alginic** Acid
[168] 4.17 g of **alginic** acid tetrabutylammonium salt ...
alginic acid obtained from marine cystis pyrifera ... Acid ... mEq of a monomeric unit are solubilized in ... of DMSO. ...
[169] The following preparations exemplify the medical ... according to the invention containing the **alginic** esters.
"IV" What is claimed is:
... 1. Cross-linked acidic polysaccharides according ... claim 1, wherein said polysaccharides are selected from the group consisting of hyaluronic acid, **alginic** acid, carboxymethylcellulose, and carboxymethylchitin.

... 7. Cross-linked acidic polysaccharides according ... claim 6, wherein said alcohol is a member selected from the group consisting of **aliphatic**, araliphatic, cycloaliphatic and heterocyclic alcohols.

8. Cross-linked acidic polysaccharides according to claim 7, wherein said alcohols of the **aliphatic** series have a maximum of 34 carbon atoms and may be substituted by one or two functional groups selected from ... wherein the hydrocarbyl radical in these groups have a maximum of 6 functionally modified carbon atoms, and alcohols of the **aliphatic** series may be interrupted in the carbon atom chain by heteroatoms selected from the group consisting of oxygen, sulfur and ...
... polysaccharides according to claim 7, wherein said alcohols of the araliphatic series have only one benzene residue and have an **aliphatic** chain with a maximum of 4 carbon atoms and/or in the benzene residue may be substituted by between 1 and 3 methyl or hydroxy groups, or by halogen atoms, and wherein the **aliphatic** chain may be substituted by one or two functions selected from the group consisting of free amino groups, mono- or ...
14. Cross-linked acidic polysaccharides according to claim 7, wherein said alcohols of the cycloaliphatic or **aliphatic** -cycloaliphatic series are mono- or polycyclic hydrocarbons with a maximum of 34 carbon atoms.

15. Cross-linked acidic polysaccharides according to claim 7, wherein said heterocyclic alcohols are mono- or polycyclic cycloaliphatic or **aliphatic** cycloaliphatic alcohols interrupted in the carbon atom chain or ring by one or more heteroatoms selected from the group consisting ...
... A salt according to claim 17, wherein said ... **aliphatic**, araliphatic, cycloaliphatic or heterocyclic ...

... mono-, di- and tri-alkylamines with a maximum of ... carbon atoms, arylalkylamines with a maximum of 14 carbon atoms in the **aliphatic** part and a benzene group as an aromatic part, optionally substituted by between 1 and 3 methyl or ... or halogen. ...
...
20. Cross-linked acidic polysaccharides or a salt ... according to claim 2, wherein said polysaccharide is **alginic** ...

[illegible] partially cross-linked hyaluronic acid, wherein [illegible] partially cross-linked hyaluronic acid is esterified with a lower **aliphatic** alcohol, and partially includes a portion of carboxy groups salified with [illegible] metal.

[illegible]. A cross-linked polysaccharide according to claim [illegible], which is a totally, or partially cross-linked **alginic** acid, wherein said partially cross-linked **alginic** acid includes a portion of carboxy groups esterified with a lower **aliphatic** [illegible], and partially includes a portion of carboxy groups salified with [illegible] metal.

[illegible]. A cross-linked polysaccharide according to claim [illegible], wherein said **alginic** acid cross-linked to an extent of [illegible]* of the carboxy groups esterified with a lower **aliphatic** [illegible], and partially includes a portion of carboxy groups salified with [illegible] metal.

[illegible]. A cross-linked polysaccharide according to claim [illegible], wherein said **alginic** acid cross-linked to an extent of [illegible]* of the carboxy groups salified with sodium to an extent of [illegible]*; **alginic** acid cross-linked to an extent of 5* of the carboxy groups esterified with ethanol to an extent of 5*; **alginic** acid cross-linked to an extent of 25* of the carboxy groups salified with sodium to an extent of 75*; **alginic** acid cross-linked to an extent of 75* of the carboxy groups esterified with ethanol to an extent of 5*; **alginic** acid cross-linked to an extent of 75* of the carboxy groups salified with sodium to an extent of 5*; **alginic** acid cross-linked to an extent of 75* of the carboxy groups esterified with ethanol to an extent of 5*; **alginic** acid cross-linked to an extent of 1* of the carboxy groups salified with sodium to an extent of 5*; **alginic** acid cross-linked to an extent of 1* of the carboxy groups esterified with ethanol to an extent of 5*; **alginic** acid cross-linked to an extent of 25* of the carboxy groups, esterified with ethanol to an extent of 5* and salified with sodium to an extent of 5*; **alginic** acid cross-linked to an extent of 25* of the carboxy groups, esterified with ethanol to an extent of 5* and salified with sodium to an extent of 5*; and **alginic** acid cross-linked to an extent of 25* of the carboxy groups esterified to an extent of 75% with ethanol.

[illegible]. [illegible] totally or partially cross-linked carboxymethylchitin, wherein said partially cross-linked carboxymethylchitin includes a portion of carboxy groups esterified with a lower **aliphatic** alcohol, and partially includes a portion of carboxy groups salified with an alkaline metal.

41. A sanitary or **surgical** article containing a cross-linked polysaccharide according to claim 1.

42. A sanitary or **surgical** article according to claim 41, comprised of threads or films of a cross-linked product of an acidic polysaccharide.

43. A sanitary or **surgical** article according to claim 41, comprised of capsules for the subcutaneous implantation of medicaments.

44. A sanitary or **surgical** article according to claim 41, comprised of microcapsules for subcutaneous, intramuscular or intravenous injection.

45. A sanitary or **surgical** article according to claim 41, comprised of solid inserts adapted to be removed after a certain length of time.

46. A sanitary or **surgical** article according to claim 41, comprised of sponges for the healing of **wounds** and burns.

47. A sanitary or **surgical** article according to claim 41, wherein the polysaccharide is hyaluronic acid.

48. A sanitary or **surgical** article according to claim 41, wherein the polysaccharide is **alginic** acid.

[illegible]. A process according to claim [illegible], wherein said [illegible] agent is a dialkylsulfoxide or a dialkylamide of a lower **aliphatic** alcohol with an alkyl having a maximum of 4 carbon atoms.

... alginate ...
... sodium alginate is applied topically to the ... together with ... with a water-soluble calcium salt. This causes the ... sodium alginate, thereby forming the layer of ... mainly consists of calcium alginate. ...

... Sodium alginate has been used for the manufacture of ... for use in the photographic industry (French patent ... and also ..., German patent ...). Sodium alginate has ... properties with ...

wounds, ... to sodium alginate fibres. Calcium alginate ... has also been used as a therapeutic agent in the ... of bleeding wounds; alginate fibres of the salts ... therapeutic agent in calcium alginate are used in the treatment of ... sutures, fistulas, and in the treatment of ... Calcium, strontium and calcium alginates are also used as ... for ... of pills, and strontium alginate is also used for ... properties.

... Also used in industry in many of the above-mentioned ... are the ... alginic acid esters or salts of such esters, more ... ethylene glycol and propylene glycol esters. The ... is used for ... , 3rd edition, 1964, published by Academic Press, Inc. (New ... , pp. 442-443 . The ... mentioned esters have been obtained by ... alginic acid, or its salt or partial salt, with ethylene ... propylene oxide respectively. This preparation method is also ... patents for the preparation of the above-mentioned alginic ... and esters of bivalent alcohols by reaction of an aliphatic hydroxyalkyl epoxide, possibly substituted in the ... by heteroatoms in the carbon atom chain. See for example U.S. Pat. ... .

... The alginic acid esters obtainable by the action of the above-mentioned epoxides on the free acid or its salts ... partial ... of glycol esters with a low molecular weight, and a very low degree in the ... of glycol esters with long chains. It has not been possible until now to prepare total esters ... this method.

... Monovalent alcohol esters, with aliphatic and ... have also been mentioned in literature, as the all ... ester of alginic acid obtained by reaction of alginic acid ... an ethereal solution of diazomethane. (Seltsamitt ... physikal. Chemie, Vol. 114, p. 161, 1925, A. B. Steiner, Proc. ... 1951, U.S. Patent No. 2,...). It seems however ... products obtained by reaction with diazomethane are not ... alginic acid esters but rather methyl esters of an alginic ... partially etherified to the hydroxy alcohol groups, ... described for example in Example 4 of the above-mentioned U.S. ... . The methyl ester has also been obtained by reaction of dimethyl ... with a soluble salt of alginic acid in an organic solvent ... low solubility in water, but in the presence of water ... Pat. No. 2,...,... , Col. ... . The product obtained, referred to as alginic acid ... methyl alginate, is not to be considered a ... ester, since it is known that sugar hydroxyls are ... etherified with ... .

... Also mentioned in literature are alginic acid esters ... of monovalent alcohols, with no indication however ... preparation method and no description of their chemical and ... mixed products, as in the case of methyl products. (See for example U.S. Pat. No. 2,...,... in which propyl alginate is mentioned ... indication of the way in which preparation method is ... Ref-Listen, page 5, ln. ... .

... In the basis of these facts thereof ... it is ... that of all alginic acid esters only those esters of bivalent ... with ... and more preferably only the partial esters ... glycols, which ... .

... The main object of the invention is therefore the ... alginic esters, with ... those already mentioned, and the ... for their preparation.

... The present invention ... new ... and in the ... alginic acid esters and ... for the ... preparation.

... The invention ... also ... the use of these alginic ... esters ... alginic esters ... in the ... , paper, ... , ...

[illegible] **medicine** and **surgery** and also [illegible], therefore, new [illegible] **alginic** acid esters for use in these [illegible] for example, for [illegible], [illegible], pharmaceutical preparations, [illegible] [illegible] **surgical** use. The new esters are [illegible] invention includes the [illegible] **alginic** acid esters and [illegible] method is the partial esterification [illegible] defined with respect [illegible].

The present invention includes a simple and very [illegible] for the preparation of **alginic** esters, based on the treatment of preferably ammonium salts of **alginic** acid with [illegible] alkylating agents in stable, preferably aprotic, [illegible], such as in dimethylsulfoxide, making a large number of new **alginic** esters available, especially those esters of bivalent [illegible], such as ammonium, of methyl esters, and esters of aromatic, [illegible], allylic, [illegible] procedure may be used also for [illegible] partial esters thereof from partially [illegible] of bivalent **aliphatic** alcohols, obtainable by the [illegible] of **alginic** acid with **aliphatic** [illegible] diols, or partially new [illegible] esters of such alcohols.

The new **alginic** esters may be used in various [illegible] industry and in the pharmaceutical, sanitary, **surgical** [illegible] cosmetic fields, where metal **alginates** or the ester [illegible] **aliphatic** bivalent alcohols of the type of propylene [illegible] ester of **alginic** acid are already used, for example in [illegible] cosmetic industries. Therefore, part of the invention is represented by both this use of the new esters, and the [illegible] articles and industrial products, such as cosmetic, sanitary, **surgical** and pharmaceutical articles, in food products and the [illegible] toiletries, especially emulsifying agents, emulsion stabilizers, and thickening agents and possibly related. [illegible]

With the discovery of the new **alginic** esters and [illegible] the present invention, a new use for **alginic** esters [illegible] has also come to light, that is for the new esters and [illegible] already known. This new [illegible] substances, especially those with [illegible], that is dental article, but also those for parenteral use. The use of known **alginic** esters of bivalent alcohols was limited to the function of emulsifying agents, emulsion stabilizers, [illegible] agents and possibly related uses. No use in the pharmaceutical, sanitary, medical, **surgical** or cosmetic fields was envisaged [illegible] these esters. The present invention therefore concerns [illegible] above mentioned use and respective products, especially [illegible] pharmaceutical preparations containing an **alginic** ester as [illegible] the active substances.

[illegible] substance as their alcohol component. Of [illegible] pharmaceutical preparations of the present invention, therefore, [illegible] particularly interesting are those containing an **alginic** ester [illegible] from a therapeutically active alcohol, such as [illegible] mentioned hereafter, that is, esters comprised of **alginic** [illegible] esterified with the alcohol moiety of a therapeutically active compound.

The invention also includes partial **alginic** esters [illegible] metals or organic bases. In the following description, [illegible] meaning does not exclude this, the terms "**alginic** acid esters" [illegible] **alginic** esters" shall be taken to mean both the esters themselves and their above mentioned salts. In [illegible], in the above mentioned pharmaceutical preparations, the [illegible] pharmaceutically active substances may be employed, apart from [illegible] pharmaceutically active [illegible] **alginic** esters, also pharmaceutically active basic substances used to salify part [illegible] these carboxyl groups of partial **alginic** esters.

The use of the above mentioned alkaline **alginates** [illegible] various sectors of industry, pharmaceutics, **surgery** [illegible] above all in the food industry, presents some disadvantages [illegible] they are used in solid form due, because of the insolubility [illegible] **alginic** acid with low solubility which may separate in [illegible] the presence of calcium ions, in the intestinal [illegible] **alginate** may separate, and this [illegible] **alginates** are unsuitable for use in liquid [illegible] above mentioned, for example in pharmaceutical [illegible]

derivatives.

[illegible] **alginic** [illegible] have been [illegible] glycol [illegible], especially [illegible] glycol ester, in those cases in which [illegible] stability [illegible] pH [illegible] conditions, such as when the **alginate** [illegible] emulsion stabiliser, for example [illegible]. The glycol esters of **alginic** acid [illegible] however [illegible] and their use must be limited. This [illegible].

[illegible] the aforesaid various industrial and [illegible] fields an assortment of new products with properties essentially similar to those of alkaline **alginates** or the already known glycol esters, but with effects which are more in keeping with the [illegible] increasingly perfected. [illegible] the glycol [illegible]. This [illegible] esters deriving from alcohols which [illegible], such as especially **aliphatic**, cycloaliphatic, [illegible] alcohols. These new esters will be of great advantage [illegible] all in the food industry for the uses. . . .

The low level of toxicity of the esters of numerous [illegible] valent alcohols of **alginic** acid according to the present invention [illegible] exploited mainly in the pharmaceutical, cosmetic [illegible] sanitary-**surgical** fields where the new **alginic** esters may be used as biodegradable plastic materials with various [illegible] functions as the case may be. Thus, for example, the **alginic** ester [illegible] used as additives for the wide range of polymeric materials [illegible] used for sanitary and **surgical** articles, such as polyurethanes, [illegible], polyolefins, polyamides, polysiloxanes, vinyl and [illegible] polymers, with the effect of rendering these materials [illegible] compatible. In this case the addition of an **alginic** ester is carried out [illegible] by coating the surface of these materials or by dispersion in the same or. . .

In the cosmetic and pharmaceutical fields, the **alginic** esters of the invention may be used for the preparation of ointments, creams and other types of medicaments for topical [illegible], such as [illegible] creams, where they act as stabilisers [illegible] emulsifiers having a greater degree of stability than alkaline **alginates**, especially with regard to higher temperatures, and [illegible] lower degree of toxicity compared to glycol esters. In pharmaceutical [illegible] they may. . . .

1) the **alginic** ester serves as vehicle and is [illegible] mechanically, physically mixed with the active substance;

2) the **alginic** ester (partial) is salified with [illegible] substance; and

3) the **alginic** ester is esterified with an alcohol [illegible] represents the active substance.

. . . In the case of variations (2) and (3), it is possible to vary and combine the alcohol residues in the **alginic** [illegible], [illegible] the basic component in the salts, and it is possible [illegible] esters of a mixed character, in. . . .

. . . industrial sectors, such as in the food, paper, textile and printing industries, and in the preparation of sanitary, medical and **surgical** articles, detergents, household articles, [illegible] represented by those esters in which the properties of the **alginic** component are the properties to be exploited. The [illegible] esters derive from alcohols of the **aliphatic**, araliphatic, alicyclic, cycloaliphatic or heterocyclic series [illegible] have no toxic or pharmacological action, such as for example [illegible] alcohols of the **aliphatic** series or simple alcohols of the [illegible] series. Examples of these alcohols are [illegible].

. . . in therapy is represented by the esters [illegible] the pharmacological qualities of the alcohol component [illegible], that is, **alginic** acid esters with pharmacologically active alcohols, such as steroidal alcohols, such as those of the cortisone type. These esters possess. . . . but with a wider range of action. Even as compared to already known esters of such [illegible] pharmacologically active alcohols the **alginic** esters ensure a more balanced, constant and regular pharmacological action and generally [illegible] marked retard effect of the active. . . .

A third group of **alginic** acid esters according to the present invention, and representing a particularly [illegible] useful aspect of the same, is that. . . . more mixed character [illegible] the two

previous groups. That is, esters in which part [illegible] xyl [illegible] groups of **alginic** acid are esterified with a phenol [illegible] alcohol and another part with a phenol [illegible] different alcohol, in the activity of. . .

SUMM Most of the esters of **alginic** acid, in contrast to the salts, present a certain degree of solubility in [illegible]. This solubility depends on the. . . esterified part [illegible] groups and on the type of alkyl group bound to the part xyl. For example, a total ester of **alginic** acid thus obtained presents at [illegible] temperature good solubility, for example, in dimethylsulfoxide. The total esters which are all new. . .

SUMM . . . in saline and have the particular desired [illegible]. Such articles may be prepared for example by dissolving an est[illegible] **alginic** acid in an organic solvent, giving the extremely [illegible] solution the form of the desired article and lastly by extract[illegible] organic solvent with another solvent which can be mixed with the [illegible], but in which the **alginic** acid ester is insoluble, for example an al[illegible] or water.

SUMM The invention includes the industrial use of the new **alginic** esters in all the aforementioned sectors, especially in the alimentary, cosmetic, pharmaceutical and medical fields, in the manufacture of household and industrial articles, especially for the manufacture of sanitary and **surgical** articles.

SUMM The invention includes also the use of **alginic** [illegible] in general, that is the new ones and those already described in literature, for the new applications described here, for example the use as vehicles for pharmacologically active substances, [illegible] in the form of **alginic** esters with therapeutically active alcohols, [illegible] **alginic** esters of inert alcohols to mix with therapeutically active substances, or with therapeutically active bases as well as the pharmaceutical medicaments or preparations resulting from this use of **alginic** esters. In all cases the free carboxy group [illegible] be salified with inactive but therapeutically acceptable bases.

SUMM The main object of the present invention is therefore represented by the total or partial esters of **alginic** acid with alcohols of the **aliphatic**, araliphatic, cycloaliphatic or heterocyclic series and by the salts of such partial esters with inorganic or organic bases, with the exception of the partial esters of bivalent **aliphatic** alcohols.

SUMM A further object of the invention is represented by the procedure for the preparation of **alginic** esters characterised by the treatment of a quaternary ammonium salt of **alginic** acid with an etherifying agent in an aprotic solvent, and, if desired, by the salification of the free carboxy groups with inorganic or organic bases, and the partial **alginic** esters thus obtained.

SUMM A third object of the invention is represented by the use of the new **alginic** esters and their salts, in substitution of the neutral **alginates** or of the **alginates** of **aliphatic** bivalent alcohols, in the respective industrial sectors or in their applications in the cosmetic, pharmaceutical or sanitary-**surgical** fields, and by the respective products or industrial articles.

SUMM A fourth object of the invention is represented by the use of **alginic** esters as vehicles for pharmaceutically active substances and by pharmaceutical preparations or medicaments containing:

SUMM a) a carrying vehicle containing a total or partial ester of **alginic** acid or salts of such partial esters with inorganic or organic bases, or pharmaceutical preparations or medicaments containing an **alginic** ester possibly salified with inorganic or organic bases, in which at least one ester group or a salified carboxy group. . .

SUMM Alcohols of the **aliphatic** series for use as esterifying components of the carboxy groups of **alginic** acid according to the present invention are, for example, those with a maximum of 34 carbon atoms, which may be. . .

SUMM In the above groups containing hydrocarbyl radicals are preferably lower **aliphatic** radicals, such as lower alkyl, [illegible] oxygen, nitrogen and sulfur. Preference is given to alkyl [illegible] substituted with one or two. . .

SUMM Of the higher saturated **aliphatic** alcohols, those [illegible] of

[illegible] ...ment is also for example ethyl alcohol and [illegible], but especially important for the purposes. . .

[illegible] . . . The aliphatic alcohols to be [illegible] those with fully the ketones desired and in which the **aliphatic** chain has a maximum of 4 carbon atoms, in which [illegible] ketones may be substituted by between 1 and 3 methyl [illegible] by halogen atoms, especially chlorine, bromine or [illegible] in which the **aliphatic** chain may be substituted by one or more [illegible] groups selected from the group consisting of free [illegible] groups. . .

[illegible] The alcohols of the cycloaliphatic or **aliphatic** [illegible] series may derive from mono or polycyclic hydrocarbons [illegible] may have a maximum of 34 carbon atoms. Of the. . .

[illegible] Polycyclic **aliphatic** cycloaliphatic alcohols for [illegible] obtaining the esters of the present invention are [illegible], bile acids and sterols, such as. . .

[illegible] The total and partial esters of **alginic** acid and [illegible] the invention have the following general formula: ##C.** wherein R.sup.1 and R.sup.1 are each independently hydrogen or an [illegible] moiety selected from the group consisting of **aliphatic**, [illegible] cycloaliphatic and heterocyclic radicals and pharmaceutically acceptable salts thereof with the proviso that said partial ester is not a. . .

[illegible] As discussed above, in some cases **alginic** acid esters [illegible] which the ester groups derive from one or more hydroxy [illegible] with therapeutic action, may be of. . . with the same or similar activity as that of the esterifying component. In particular, it is possible to have **alginic** esters deriving on the one hand from an anti-inflammatory steroid, such as one of those mentioned above, and on the. . .

[illegible] The degree of esterification of **alginic** acid with the above mentioned alcohols depends first and foremost on the [illegible] properties desired for the various fields of. . . to such [illegible], for example the skin. Usually, a high degree of esterification [illegible] point of total esterification of **alginic** acid increases its lipophilic character and therefore decreases its solubility [illegible]. For a use in therapy of the new. . . utmost importance to [illegible] the degree of esterification in order to ensure, despite good [illegible] increased lipophilia compared to metal **alginates**, a sufficient degree [illegible] hydrosolubility, for example a solubility of 10 [illegible]. Naturally it is necessary to consider also the. . .

[illegible] As has been said previously, esterification of the [illegible] hydroxy groups of **alginic** acid may play several roles, to be exploited in various fields, for example in **medicine**, using the esters as therapeutic agents or in **surgery** using them as plastic articles. For use in therapy we have already said that esterification of an alcohol can in itself be considered therapeutically active, such as anti-inflammatory corticosteroids for example, with **alginic** acid as a means of improving therapeutic efficacy.

[illegible] With regard to similar therapeutically active alcohols **alginic** acid acts therefore as a particularly efficient [illegible] which is perfectly compatible with the biological environment. Many of these pharmacologically. . . esters with therapeutically active alcohols it is possible to esterify part or all of the remaining hydroxy groups of the **alginic** component with pharmacologically inert alcohols, such as for example saturated lower **aliphatic** alcohols, for example ethyl or isopropyl alcohols.

[illegible] . . . drugs than those available up till now. It is possible for example to obtain drugs with a "retard" action with **alginic** esters with therapeutically active alcohols, possibly solubilized also with therapeutically active bases.

[illegible] For cosmetic purposes it is preferable to use total or partial esters of **alginic** acid with pharmacologically inert alcohols, for example saturated or unsaturated **aliphatic** alcohols, for example substituted alcohols of this type with straight or ramified chains, for example between 1 and 4 carbon. . .

[illegible] . . . example alkyls with between 1 and 4 carbon [illegible], especially for methyl groups. Particularly interesting are [illegible] with cycloaliphatic and **aliphaticcycloaliphatic** alcohols derived from terpenes, such as those mentioned above and [illegible] therapeutically active alcohols, which can otherwise be used in. . .

[illegible] The alcohols to be used preferably for the manufacture [illegible] sanitary and

surgical articles are essentially the same as those [illegible]
at the [illegible] use.

SUM1 Thus, for example, for the manufacture of plastic **surgical**
articles it is preferable to use [illegible] with a high
degree of esterification, for example between [illegible].

SUM1 . . . are those partial esters in which at least [illegible] at the most
3 * of all the carboxy groups of **alginic** acid are [illegible],
and especially those with a percentage of between [illegible], [illegible]
preferably for alimentary, . . .

SUM1 Of particular interest are the salts with organic [illegible], especially
acidified bases and, therefore, **aliphatic**, araliphatic,
cycloaliphatic or heterocyclic amines. These amines may derive
from therapeutically acceptable amines [illegible] therapeutically
inactive amines, for from amines with a therapeutic [illegible] of the first
type, preferred are **aliphatic** amines, for example mono-, di-
and tri-alkylamines with alkyl groups with a maximum of [illegible] atoms
or alkylalkylamines with [illegible].

SUM1 Examples of specific useful drugs are all those [illegible] mentioned above
having acidified basic groups regarding the **alginic** esters with
therapeutically active alcohols or those mentioned elsewhere in this
text, for example the various antibiotics.

SUM1 . . . the partial esters with the aforesaid therapeutically active
bases and the use of such salts represents a particular form of
alginic esters functioning as a vehicle, obtainable with
simple addition to the active substance of partial [illegible] esters.
. .

SUM1 The vehicling action of **alginic** esters therefore opens up
possibilities for new medicaments wherein the [illegible] are:

SUM1 In an **alginic** ester as described above one of the [illegible].

SUM1 These medicaments are a further object of the invention. The
alginic esters for use in these medicaments are also those
in which the esterifying alcohol is itself not pharmacologically active,
for example a simple **aliphatic** alcohol, as described above.
Included in the invention however are medicaments of this type in which
the ester is also . . .

SUM1 In such medicaments, if partial esters of **alginic** acid are
used, the possible salification of the remaining free carboxy groups is
carried out preferably with therapeutically [illegible] bases . . .
Corresponding association of substances have basic [illegible], such as for
example antibiotics containing amino groups, and partial esters of
alginic acid are used with remaining free carboxy group, a salt
is formed between the free carboxy groups of **alginic** acid and
those basic substances. The basic substance may [illegible] be excessive,
thus having basic salts. The new medicaments therefore include in
particular the partial esters of **alginic** acid partially
salified with pharmacologically active substances [illegible] character,
as described above. The nonesterified carboxy groups also . . .

SUM1 The use of **alginic** esters as a vehicle is particularly useful
in ophthalmology, where it is possible to observe particular
compatibility of the . . .

SUM1 By using the esters of the present invention these difficulties can be
overcome. The presence of the **alginic** ester as vehicle in
ophthalmic drugs allows for the formulation of extended preparations
with no concentration gradient of the active. . .

SUM1 . . . systemic effect thanks to transcutaneous [illegible], for
example in suppositories. All these applications [illegible] in
human and veterinary **medicine**. In human **medicine** the
new medicaments are particularly suitable for use in [illegible]. The
present invention therefore also includes in particular any . . .

SUM1 . . . detailed with respect to their use in [illegible] fields of
therapy, beginning with the distinction between human veterinary
medicine and then specifying the various sectors of application
with respect to the organs or tissues to be treated, such as . . .
anti-inflammatory, vasoconstrictor, antibacterial, [illegible] drug. In
the field of ophthalmology, the indications can in particular for
example: mitotic, anti-inflammatory, **wound** healing [illegible]
antimicrobial effects.

SUM1 . . . in several antibiotics with the [illegible] mydriatic, the
[illegible] antibiotics with a mydriatic or a mitotic [illegible] **wound**
healer or an anti-allergic agent etc. For example [illegible] use

... f ... with ... salts ... pyridinium ...
... methylphenylpiperidinehexamethonium. ...

COL1 ... ... association of various active substances ... limited to these fields, but in all the above ...
medicine it is possible to use associations similar ... already in use for the pharmaceutical preparations ...

COL1 ... ... the ... referred to above wherein the ... of a basic character, the salts formed with ... **alginic** ... may be of various types. That is, all of the ... may be sulfonic ... fully ...

COL1 According to a main aspect of the invention, ... containing the **alginic** ester or its salts are ... with therapeutically active or inactive substances as ... suitable alone (excepting possibly an aqueous ... all types of medicaments described here and also mixtures of such ..., as well as possibly mixtures of the new **alginic** esters with ... **alginic** acid or mixtures of their salts, for example ... salts.

COL1 ... ... hydrocortisone, prednisolone, fluorometholone, ..., and possibly their esters, for example propionates or butyrates; non-steroid anti-inflammatories, for example indomethacin, ... flurbiprofen; **wound** healers such as epidermal ... EGF; local anesthetics, such as Benoxinate, ... and possibly their salts; cholinergic agonists such ...

COL1 ... ... substances are used, such as those ... above, the salts of the basic active substances and the partial esters of **alginic** acid may be mixed salts of one or more of such ... substances or possibly mixed salts of this type. ... with the ... mentioned metals or bases. For example it is possible ... salts of a partial ester of **alginic** acid with a pharmacologically ... inactive alcohol, for example a lower alkanol, ... with a certain percentage of the acid groups. ... one of the ... above mentioned metals. It is possible to mix this type of mixed salt ... with free **alginic** acid or its fractions or their metal salts, ... indicated above for the medicaments constituted by salts of only one. ...

COL1 ... ... to determine by analogy which medicaments ... according to the present invention are to be used in the other fields of **medicine** mentioned above, such as otolaryngology or odontology, in internal **medicine**. For example, in endocrinology, it is ... that use preparations absorbed intradermally or through ..., for example by nebul. ...

COL1 METHODS OF PREPARATION FOR THE **ALGINIC** ESTERS

COL1 According to the chemically new and original ... of the present invention, the **alginic** acid esters may be prepared ... advantage starting with quaternary ammonium salts of **alginic** acid with an etherifying agent in a preferably ... organic solvent, such as dialkylsulfoxides, dialkylcarboxamides, ... as in particular lower alkyl dialkylsulfoxides, above all dimethyl ..., and lower alkyl dialkylamides of lower **aliphatic** acids, ... and methyl or diethyl formamide or dimethyl or diethylacetamide. It is possible, however, to use other solvents which are not always ... such as alcohols, ethers, ketones, esters, especially **aliphatic** or heterocyclic alcohols and ketones with a low boiling point, such as hexafluoroisopropanol and trifluoroethanol. The ... is brought about. ...

COL1 The preferred esterification process, therefore, ... is reacting, in an organic solvent, a quaternary ammonium salt of **alginic** acid with a stoichiometric quantity of a compound of the formula

COL1 wherein A is selected from the group consisting ... **aliphatic**, araliphatic, cycloaliphatic, **aliphatic**-cycloaliphatic ... and heterocyclic radicals and X is a halogen atom, ... in said stoichiometric quantity of A--X is determined by ... ...

COL1 As starting quaternary **ammonium** salts it is preferable to use lower **ammonium** tetraalkylates, the **alkyl** groups having preferably between 1 and 6 carbon atoms. Finally, the **alginate** of **tetrabutylammonium** is used. These quaternary **ammonium** salts can be prepared by reacting the metal salt of **alginic** acid, preferably one of those mentioned above, especially sodium or potassium salt, in aqueous **solution** with a sulfonic resin salified with the quaternary **ammonium** ...

The **tetraalkylammonium alginates** [illegible] **alkyls**, especially **alkyls** with between 1 and [illegible] atoms, are new and form another object of the present invention. Unexpectedly, these salts proved to be soluble in [illegible] solvents, and esterification of **alginic** acid with [illegible] the afforesaid new products is therefore made possible [illegible] and with higher product yields. Only by using this procedure, [illegible], is it possible to exactly [illegible] the number of carboxy groups of **alginic** acid to be esterified.

SUMM: The variation of the previously specified [illegible] a tetraalkylammonium salt of **alginic** acid, suspended [illegible] a suitable solvent such as dimethylsulfoxide, with [illegible] alkylating agent in the presence of a catalyzing [illegible] salt, [illegible] as tetrabutylammonium iodide. The new procedure makes possible to obtain, as already stated, the total esters of **alginic** acid and also substituted alcohols such as glycols, which were previously unobtainable.

SUMM: To prepare new esters according to the present invention it is possible to use **alginic** acids of any origin, such as for example the acids extracted from the above mentioned botanical materials. The preparation of these acids is described in literature. It is preferable to use purified **alginic** acids.

DETD: Preparation of the Tetrabutylammonium Salt of **Alginic** Acid

DETD: 1 m. Eq. of a sodium salt of **alginic** acid, [illegible] g. to 2 g. of dry compound, are solubilized in [illegible] ml of distilled water. The solution is then [illegible]

DETD: Preparation of the (Partial) Ethyl Ester of **Alginic** Acid--10% of the Carboxy Groups Esterified--30% of the Carboxy Groups Salified

DETD: 1 g (25.9 m. Eq.) of the tetrabutylammonium salt of **alginic** acid (prepared from **alginic** acid obtained from Laminaria hyperborea) are solubilized in 400 ml of DMSO at [illegible] C. [illegible] g (2.59 m. Eq.). [illegible]

DETD: Preparation of the (Partial) Ethyl Ester of **Alginic** Acid--50% of the Carboxy Groups Esterified--70% of the Carboxy Groups Salified

DETD: 1 g (25.9 m. Eq.) of the tetrabutylammonium salt of **alginic** acid (prepared from **alginic** acid obtained from Ascophyllum nodosum) are solubilized in 400 ml of DMSO at 25 [illegible] C. 1.41 g (7.18 m. Eq.). [illegible]

DETD: Preparation of the (Partial) Ethyl Ester of **Alginic** Acid--60% of the Carboxy Groups Esterified--5% of the Carboxy Groups Salified

DETD: 1 g (25.9 m. Eq.) of the tetrabutylammonium salt of **alginic** acid (prepared from **alginic** acid obtained from Macrocystis pyrifera) are solubilized in 400 ml of DMSO at 25 [illegible] C. 1.55 g (11.9 m. Eq.). [illegible]

DETD: Preparation of the (Partial) Ethyl Ester of **Alginic** Acid--70% of the Carboxy Groups Esterified--30% of the Carboxy Groups Salified

DETD: 10 g (25.9 m. Eq.) of the tetrabutylammonium salt of **alginic** acid (prepared from **alginic** acid obtained from Laminaria hyperborea) are solubilized in 400 ml of DMSO at 25 [illegible] C. 1.64 g (16.7 m. Eq.). [illegible]

DETD: Preparation of the (Partial) Ethyl Ester of **Alginic** Acid--90% of the Carboxy Groups Esterified--10% of the Carboxy Groups Salified

DETD: 10 g (25.9 m. Eq.) of the tetrabutylammonium salt of **alginic** acid (prepared from **alginic** acid obtained from Macrocystis pyrifera) are solubilized in 400 ml of DMSO at 25 [illegible] C. 3.17 g (21,5 m. Eq.). [illegible]

DETD: Preparation of the (Partial) Isopropyl Ester of **Alginic** Acid--5% of the Carboxy Groups Esterified--1% of the Carboxy Groups Salified

DETD: 1 g (25.9 m. Eq.) of the tetrabutylammonium salt of **alginic** acid (prepared from **alginic** acid obtained from Ascophyllum nodosum) are solubilized in 400 ml of DMSO at 25 [illegible] C. 0.77 g (21,5 m. Eq.). [illegible]

DETD: Preparation of the (Partial) Isopropyl Ester of **Alginic** Acid--7% of the Carboxy Groups Esterified--1% of the Carboxy Groups Salified

DETD: 1 g (25.9 m. Eq.) of the tetrabutylammonium salt of **alginic** acid (prepared from **alginic** acid obtained from Laminaria hyperborea) are solubilized in 400 ml of DMSO at 25 [illegible] C. 1.11 g (36.7 m. Eq.). [illegible]

[EX] Preparation of the (Partial) Isopropyl Ester of **Alginic** Acid--[illegible]% of the Carboxy Groups Esterified--[illegible]% of the Carboxy Groups Salified

[EX] [illegible] g (2[illegible] m. Eq.) of the tetrabutylammonium salt of **alginic** acid (prepared from **alginic** acid obtained from M[illegible] pyrifera) are solubilized in 4[illegible] ml of DMSO at [illegible] m. Eq. [illegible]

[EX] Preparation of the (Partial) Isopropyl Ester of **Alginic** Acid--[illegible]% of the Carboxy Groups Esterified--[illegible]% of the Carboxy Groups Salified

[EX] [illegible] g (2[illegible] m. Eq.) of the tetrabutylammonium salt of **alginic** acid (prepared from **alginic** acid obtained from A[illegible] nodosum) are solubilized in 4[illegible] ml of DMSO at 25.[illegible] m. Eq. [illegible]

[EX] Preparation of the (Partial) Isopropyl Ester of **Alginic** Acid--[illegible]% of the Carboxy Groups Esterified--[illegible]% of the Carboxy Groups Salified

[EX] [illegible] g (2[illegible] m. Eq.) of the tetrabutylammonium salt of **alginic** acid (prepared from **alginic** acid obtained from L[illegible] hyperborea) are solubilized in 4[illegible] ml of DMSO at [illegible] m. Eq. [illegible]

[EX] Preparation of the (Partial) Terbutyl Ester of **Alginic** Acid--[illegible]% of the Carboxy Groups Esterified--[illegible]% of the Carboxy Groups Salified

[EX] [illegible] g (2[illegible] m. Eq.) of the tetrabutylammonium salt of **alginic** acid (prepared from **alginic** acid obtained from A[illegible] nodosum) are solubilized in 400 ml of DMSO at 25.[illegible] m. Eq.) [illegible]

[EX] Preparation of the (Partial) Terbutyl Ester of **Alginic** Acid--70% of the Carboxy Groups Esterified--30% of the Carboxy Groups Salified

[EX] [illegible] g (23.3 m. Eq.) of the tetrabutylammonium salt of **alginic** acid (prepared from **alginic** acid obtained from L[illegible] hyperborea) are solubilized in 400 ml of DMSO at [illegible] m. Eq. [illegible]

[EX] Preparation of the (Partial) Terbutyl Ester of **Alginic** Acid--50% of the Carboxy Groups Esterified--50% of the Carboxy Groups Salified

[EX] [illegible] g (23.3 m. Eq.) of the tetrabutylammonium salt of **alginic** acid (prepared from **alginic** acid obtained from M[illegible] pyrifera) are solubilized in 400 ml of DMSO at [illegible] m. Eq. [illegible]

[EX] Preparation of the (Partial) Terbutyl Ester of **Alginic** Acid--30% of the Carboxy Groups Esterified--70% of the Carboxy Groups Salified

[EX] [illegible] g (23.3 m. Eq.) of the tetrabutylammonium salt of **alginic** acid (prepared from **alginic** acid obtained from L[illegible] hyperborea) are solubilized in 400 ml of DMSO at [illegible] m. Eq.) [illegible]

[EX] Preparation of the (Partial) Terbutyl Ester of **Alginic** Acid--10% of the Carboxy Groups Esterified--90% of the Carboxy Groups Salified

[EX] [illegible] g (23.3 m. Eq.) of the tetrabutylammonium salt of **alginic** acid (prepared from **alginic** acid obtained from M[illegible] pyrifera) are solubilized in 4[illegible] ml of DMSO at [illegible] m. Eq. [illegible]

[EX] Preparation of the (Partial) Benzyl Ester of **Alginic** [illegible]% of the Carboxy Groups Esterified--[illegible]% of the Carboxy Groups Salified

[EX] [illegible] g (23.3 m. Eq.) of the tetrabutylammonium salt of **alginic** acid (prepared from **alginic** acid obtained from A[illegible] nodosum) are solubilized in 4[illegible] ml of DMSO at 25.[illegible] m. Eq. [illegible]

[EX] Preparation of the (Partial) Benzyl Ester of **Alginic** [illegible]% of the Carboxy Groups Esterified--[illegible]% of the Carboxy Groups Salified

[EX] [illegible] g (23.3 m. Eq.) of the tetrabutylammonium salt of **alginic** acid (prepared from **alginic** acid obtained from L[illegible] hyperborea) are solubilized in 4[illegible] ml of DMSO at [illegible] m. Eq. [illegible]

[EX] Preparation of the (Partial) Benzyl Ester of **Alginic** [illegible]% of the Carboxy Groups Esterified--[illegible]% of the Carboxy Groups Salified

[illegible] g ([illegible] m. Eq.) of the tetrabutylammonium salt of **alginic** acid (prepared from **alginic** acid obtained from A[illegible] hyperborea) are solubilized in 4[illegible] ml of DMSO at [illegible] m. Eq.[illegible]

[illegible] Preparation of the Partial Benzyl Ester of **Alginic** [illegible]--[illegible]% of the Carboxy Groups Esterified--[illegible]% of the Carboxy Groups Salified

[illegible] g ([illegible] m. Eq.) of the tetrabutylammonium salt of **alginic** acid (prepared from **alginic** acid obtained from A[illegible] hyperborea) are solubilized in 4[illegible] ml of DMSO at [illegible], [illegible] m. Eq., [illegible].

[illegible] Preparation of the Partial Benzyl Ester of **Alginic** [illegible]--[illegible]% of the Carboxy Groups Esterified--[illegible]% of the Carboxy Groups Salified

[illegible] g ([illegible] m.Eq.) of the tetrabutylammonium salt of **alginic** acid (prepared from **alginic** acid obtained from M[illegible] pyrifera) are solubilized in 4[illegible] ml of DMSO at [illegible] m. Eq.[illegible].

[illegible] Preparation of the Methyl Ester of **Alginic** Acid

[illegible] g ([illegible] m. Eq.) of the tetrabutylammonium salt of **alginic** acid (prepared from **alginic** acid obtained from A[illegible] nodosum) are solubilized in 4[illegible] ml of DMSO at [illegible] m. Eq.[illegible].

[illegible] Preparation of the Benzyl Ester of **Alginic** Acid

[illegible] g ([illegible] m. Eq.) of the tetrabutylammonium salt of **alginic** acid (prepared from **alginic** acid obtained from M[illegible] pyrifera) are solubilized in 4[illegible] ml of DMSO at [illegible]. 4.46 g (16 m. Eq.).

[illegible] Preparation of the Ter-butyl Ester of **Alginic** Acid

[illegible] g (28.9 m. Eq.) of the tetrabutylammonium salt of **alginic** acid (prepared from **alginic** acid obtained from L[illegible] hyperborea) are solubilized in 400 ml of DMSO at [illegible]. 4.6[illegible] g (26 m. Eq.).

[illegible] Preparation of the Isopropyl Ester of **Alginic** Acid

[illegible] g (28,9 m. Eq.) of the tetrabutylammonium salt of **alginic** acid (prepared from **alginic** acid obtained from L[illegible] hyperborea) are solubilized in 4[illegible] ml of DMSO at [illegible]. 4.64 g (26 m. Eq.).

[illegible] Preparation of the Ethyl Ester of **Alginic** Acid

[illegible] g (28.9 m. Eq.) of the tetrabutylammonium salt of **alginic** acid (prepared from **alginic** acid obtained from A[illegible] nodosum) are solubilized in 4[illegible] ml of DMSO at [illegible]. 4.[illegible]6 m. Eq.).

[illegible] Preparation of the Amikacin Salt of **Alginic** Acid [illegible] Esterified with Ethanol--75% of Carboxylic Groups Esterified With Ethanol--25% of Carboxylic Groups Salified With Amikacin

[illegible].41 g of a 75% ethyl ester of **alginic** acid and [illegible] at 25% (corresponding to 1 m. Eq. of a monomeric unit relative to the non-esterified carboxyl),.

[illegible] Preparation of Erythromycin Salt of **Alginic** Acid [illegible] Esterified With Ethanol--75% of Carboxylic Groups Esterified With Ethanol--25% of Carboxylic Groups Salified With Erythromycin

[illegible].41 g of a 75% ethyl ester of **alginic** acid and [illegible] salt at 25% (corresponding to 1 m. Eq. of a monomeric unit relative to the non-esterified carboxyl),.

[illegible] Preparation of Streptomycine Salt of **Alginic** Acid [illegible] Esterified With Ethanol--75% of Carboxylic Groups Esterified With Ethanol--25% of Carboxylic Groups Salified With Streptomycine

[illegible].41 g of a 75% ethyl ester of **alginic** acid and [illegible] salt (corresponding to 1 m. Eq. of a monomeric unit relative to the non-esterified carboxyl), are.

[illegible] Preparation of the Partial and Mixed Ethanol and [illegible] Esters [illegible] of **Alginic** Acid --4[illegible]% of Carboxylic Groups Esterified With Ethanol--2[illegible]% of Carboxylic Groups Esterified With [illegible]--4.% of Salified Carboxylic Groups Na

[illegible].45 g of the tetrabutylammonium salt of **alginic** acid (prepared from Laminaria hyperborea [illegible]. Eq. of a monomeric unit are solubilized in [illegible] ml of.

[illegible] Preparation of the Partial Esterification of Ester [illegible] **Alginic** Acid--[illegible]% of Esterified Carboxylic Groups-- [illegible] Salified Carboxylic Groups Na.

[illegible] 4.[illegible] g of the tetrabutylammonium salt of **alginic**

prepared from [illegible] monomeric unit are solubilized in [illegible] ml of [illegible]

[illegible] Preparation of the Mixed Ethanol and Hydrocortisone Ester [illegible] of **Alginic** Acid--[illegible]% of Carboxylic Groups Esterified [illegible] Ethanol--[illegible]% of Carboxylic Groups Esterified With [illegible]

[illegible] 4.1[illegible] g of the tetrabutylammonium salt of **alginic** [illegible] prepared from [illegible] monomeric unit are solubilized in [illegible] ml of [illegible]

[illegible] Preparation of the (Partial) Hydrocortisone Ester [illegible] of **Alginic** Acid--[illegible]% of Esterified Carboxylic Groups--[illegible]% of Salified Carboxylic Groups (Na)

[illegible] [illegible] g of the tetrabutylammonium salt of **alginic** [illegible] prepared from Macrocystis pyrifera) corresponding [illegible] m. Eq. of a monomeric unit are solubilized in [illegible] ml of [illegible]

[illegible] Preparation of the (Mixed) Ethanol and [illegible] Ester [illegible] of **Alginic** Acid--[illegible]% of Carboxylic Groups Esterified [illegible] Ethanol--[illegible]% of Carboxylic Groups Esterified With [illegible]

[illegible] 4.1[illegible] g of the tetrabutylammonium salt of **alginic** [illegible] prepared from Macrocystis pyrifera) corresponding [illegible] m. Eq. of a monomeric unit are solubilized in [illegible] ml of [illegible]

[illegible] Preparation of the (Partial and Mixed) Ethanol and [illegible] Ester [illegible] of **Alginic** Acid--4[illegible]% of Carboxylic Groups Esterified With Ethanol--[illegible]% of Carboxylic Groups [illegible] With Hydrocortisone [illegible]--4[illegible]% of Salified Carboxylic Groups (Na)

[illegible] 4.1[illegible] g of the tetrabutylammonium salt of **alginic** [illegible] prepared from Macrocystis pyrifera) corresponding [illegible] m. Eq. of a monomeric unit are solubilized in [illegible] ml of [illegible]

[illegible] PHARMACEUTICAL PREPARATIONS OF THE **ALGINIC** ESTERS

[illegible] One object of the present invention is the pharmaceutical preparations containing one or more **alginic** acid esters as described above or medicaments resulting from the association of [illegible] ester with a pharmacologically active substance as described above, that is medicaments in which the **alginic** ester acts as a vehicle for the active substance.

[illegible] The pharmaceutical preparations containing therapeutically active **alginic** esters, possibly in the form of the above [illegible] resulting from the association of components [illegible], contain the [illegible]

[illegible] [illegible] of the therapeutically active alcohol, [illegible] be exploited. In this way, for example, the dosage [illegible] **alginic** ester with cortisone may be derived from its content in this same steroid and from its usual dosage in the [illegible]

[illegible] The particular form of pharmaceutical preparation [illegible] presented by the abovesaid medicaments constituted by the association [illegible] **alginic** ester and an active substance, for example [illegible] use. These may also be in solid form, for example [illegible]. These solutions are preferably made with distilled water [illegible] sterile saline and preferably contain no other pharmaceutical vehicle [illegible] the **alginic** ester or one of its salts.

[illegible] [illegible] that is with a physiologically tolerable pH. Adjustment of the pH, for example in the above mentioned salts of the **alginic** acid esters with a basic active substance, may be effected by suitably regulating the quantities of polysaccharide, its [illegible] and of the basic substance itself. In this way, for example, if [illegible] of an **alginic** ester salt with a basic substance is [illegible] excess of free acid groups can be neutralized with [illegible]

[illegible] In the cosmetic articles according to the invention [illegible] **alginic** esters and their salts are mixed with the excipients [illegible] used in this field and are for example those already listed [illegible] for the pharmaceutical preparations. Above all are used [illegible], ointments, lotions for topical use in which the **alginic** ester [illegible] of its salts may constitute the active cosmetic principle [illegible] possibly with the addition of other cosmetically active [illegible] principles, such as for example steroids, for example pregnenolone, [illegible] principles previously reported. In these preparations the **alginic** ester may be an ester with a cosmetically active alcohol, [illegible] panthenol, [illegible] an ester with an alcohol [illegible] with a lower **aliphatic** alcohol, [illegible]

[illegible] the effect [illegible] properties [illegible] polysaccharide [illegible] from
alginic acid [illegible] of its salts.

. . . [illegible] for example disinfectant substances, [illegible] water-repellents, [illegible] antiwrinkle [illegible] substances, especially perfumes. In this case the **alginic** ester itself may also be the active ingredient [illegible] with these same properties, for example from [illegible] **aliphatic** [illegible] terpene alcohols in the case of [illegible] ventilating substance for instance with [illegible]

partial ester of **alginic** acid with [illegible]
partial ester of **alginic** acid with hydr[illegible]
Formulation [illegible]-cream containing a partial ester [illegible] **alginic** acid with ethyl alcohol, of which [illegible] gr. contains [illegible]
partial ester of **alginic** acid with ethyl alcohol, [illegible]
Medical Articles Containing the **Alginic** Esters
One important application of the present invention [illegible] the sanitary and **surgical** articles already described, the [illegible] their manufacture and their use. The invention therefore [illegible] all the articles similar to those already on the market [illegible] **alginic** acid but containing an **alginic** ester or one of its salts in place of the free acid or one of its [illegible], for example inserts. . . .

Completely new **surgical** and sanitary articles [illegible] the present invention are represented by the esters [illegible] **alginic** acid regenerated as such from appropriate organic [illegible] and capable of being made into sheet and thread form, thus [illegible] films, sheets and threads for use in **surgery**, as skin auxiliar[illegible] substitutes in cases of serious damage to this [illegible], such as for example following burns, or as suture threads in **surgical** operations. The invention includes in particular [illegible] and a preparation procedure for such articles consisting [illegible] formation of a solution of **alginic** ester or of one of its salts [illegible] appropriate organic solvent, for example a ketone, [illegible] an aprotic solvent such as an amide of a carboxylic [illegible], especially a dialkylamide or of an **aliphatic** acid with between 1 and [illegible] carbon atoms and deriving from alkyl groups with [illegible] 1 and [illegible] carbon atoms, . . .

. . . by contact with another organic or aqueous [illegible], capable of being mixed with the first solvent and in which the **alginic** ester is not soluble, especially a lower **aliphatic** [illegible], for example ethyl alcohol (wet spinning), or [illegible] solvent with a fairly low boiling point have been used to prepare [illegible] solution of **alginic** derivative, in removing such solvent under [illegible] conditions with a current of gas, and especially [illegible] heated nitrogen (dry spinning). . . .

The threads obtained with the **alginic** acid ester [illegible] used for the preparation of gauzes to be used for the [illegible] of **wounds** and in **surgery**. These gauzes have the exceptional advantage of biodegradability in the [illegible], made possible by the naturally existing enzymes. These enzymes [illegible] the ester into **alginic** acid and the corresponding alcohol, when an **alginic** ester deriving from a therapeutically acceptable alcohol is used, such as ethyl alcohol.

These gauzes and also the aforesaid threads may [illegible] also be left inside the organism after **surgery**, being then [illegible] after the previously mentioned process of degradation.

In the preparation of the aforesaid sanitary and **surgical** articles, it is convenient to add plasticizing [illegible] improve their mechanical characteristics, [illegible]

Of great importance also is the preparation of [illegible] made with **alginic** esters, solving the problems previously [illegible] with their use, up till now very limited, for the same [illegible]

A further application of the new esters in the [illegible] **medicine** and **surgery** involves the preparation of a wide [illegible] solid inserts such as plates, discs, laminas, [illegible] of a proteinaceous nature, [illegible] unpleasant reactions, such as inflammation [illegible] In the case of **alginic** esters, this danger does not [illegible]

[illegible] the application to the medical-surgical field [illegible]
[illegible] the present invention, which [illegible] with
expansible material, especially in the form of sp[illegible], [illegible] the
medication of wounds or various types of lesions.

[187] The following preparations exemplify the medical [illegible] and [illegible] to
the invention containing the alginic esters.

[188] Preparation of Films Using Esters of Alginic Acid

[189] A solution is prepared in dimethylsulfoxide of [illegible] ethyl ester of
alginic acid with a concentration of [illegible] ml. The [illegible]
thus obtained is pressed by means of a pump for [illegible].

[190] Preparation of a Spongy Material Made With Alginic [illegible]

[191] 1 g of benzyl ester of alginic acid in which all the
carboxylic groups are esterified obtained for example as described in
Example 1[illegible] are dissolved in. [illegible]

[192] Preparation of a Spongy Material Made With Alginic [illegible] Esters

[193] In the manner described in Example 1[illegible], it is possible to prepare spongy
materials with other alginic acid esters. In the [illegible]
dimethylsulfoxide it is possible to use, if desired, [illegible] other solvent
capable of dissolving. [illegible]

[194] [illegible] similar compounds, that is, compounds [illegible] that
in suspension or solution of the solvent used to [illegible] the
alginic acid in such a way as to form a gas, such as [illegible]
dioxide, which has the effect of producing. [illegible]

CLM What is claimed is:

1. A total, substantially water-insoluble ester of alginic
acid in which the esterifying alcohol is selected [illegible] group
consisting of nonyl alcohol, dodecyl alcohol, [illegible], hydroxyl-
.

2. An alginic acid ester according to claim 1, wherein said
esterifying alcohol is selected from the group consisting of prednisolone,
dexamethasone, cortisone,. [illegible]

3. [illegible] method of ophthalmologic treatment which comprises administering, to
the corneal surface, an ophthalmologically effective amount of a total
ester of alginic acid in which the esterifying alcohol moiety
is derived from an aliphatic alcohol with a maximum of [illegible]
carbon atoms.

5. A process for the preparation of total esters of alginic
acid which comprises the following steps: a) [illegible] a quaternary
ammonium salt of alginic acid in an organic solvent,
treating the solubilized salt of alginic acid [illegible]
with an esterification agent which is gradually [illegible] the dissolved
quaternary ammonium salt, and c). [illegible]

7. A process according to claim 5, wherein said quaternary ammonium salt
is a lower tetraalkyl ammonium salt of alginic acid.

8. A process according to claim 8, wherein said quaternary ammonium salt
is tetrabutylammonium salt of alginic acid.

[illegible] process according to claim 5, which, in step [illegible], comprises adding an
organic solvent to precipitate out said ester of alginic acid.

11. A process according to claim 5, which further [illegible] the washing and
drying said ester of alginic acid.

12. A process according to claim 5, wherein said [illegible] quaternary ammonium
salt of alginic acid is prepared by passing an [illegible] metal
salt of alginic acid through a quaternary ammon[illegible] ion
exchange resin; and wherein said quaternary [illegible] salt of
alginic acid.

[illegible] radical that an alcohol ROH [illegible] by the [illegible] R and in which R
group is an optionally substituted aliphatic [illegible] with a
maximum of 14 carbon atoms; or b) an optionally [illegible] and aliphatic
alcohol with only the benzene ring and in which the aliphatic
chain has a maximum of 4 carbon atoms; or c) an [illegible] substituted
cycloaliphatic alcohol which is mon- or polycyc[illegible] a maximum of 14
[illegible]; [illegible] an optionally substituted aliphatic

... -hydroxyl aliphatic alcohol which may be further substituted by ... hydroxyl ... 1-4 carbon atoms; ... an epihalohydrin substituted ... selected from the group consisting of ... and ... and ... and wherein, if desired, ... **aliphatic**, cyclo**aliphatic**, **aliphatic**-cyclo**aliphatic** ... be further substituted by the ... hydroxyl ... ether ... with ... hydroxyl-substituted ... selected from the group consisting of ... hydroxyl, hydroxy ... and the ... substituted in the **aliphatic** ... the ... selected from the group consisting of ... diethyl, ... phosphinium and phosphinium groups, and ... 10. An ... ether ... **alginic** ... prepared according to claim 8.

... ANSWER 10 OF 46 USPATFULL
... Cationized polysaccharide derivatives with hypo... lipid activity
... US ... 19911 ...
... ... Am. J. of Clinical Nutrition, 53, April ..., p. ...-... In ... the ... the positive charges in the ... polysaccharide **macromolecules** are obtained by simple protonation ... amino ... e.g., at ... under the pH conditions of the ... ... pH.perspectively. ... ...
... ... solvent which dissolves or swells the ... polysaccharide. The preferred solvents, both for ... treatment and the subsequent reactions, are **aliphatic** alcohols, ... particular those having 1-4 carbon atoms; polyalkylene ... with 2-... carbon atoms, in particular ethylene and diethylene glycol; glycerin; **aliphatic** ketones, in particular acetone; linear and ... ethers, in particular dioxane; and **aliphatic** and ... hydrocarbons with 6-15 carbon atoms.
... ... for introducing side chains into the ... molecule of the pretreated polysaccharide are effected by using ... ... the **aliphatic** and/or aromatic amines or the amino ... having the structure which it is intended to introduce ... the polysaccharide molecules. ... ...
... What is claimed is:
... A process for preparing a cationized derivative ... a natural **polysaccharide** ... the formula: ##STR=## wherein m ... ... number between 50 and 5,000; A is N.sup.(+) RR... ... ... between ... and 2.; R, R.sup.1 and R.sup.2 are the ... different and are hydrogen, a linear or branched **alkyl** with 1 ... atoms, phenyl, or a C.sub.7 -C.sub.9 alkylphenyl ... ...; R.sup.3 is --CH.sub.2 --CH OH --CH.sub.2...sub.n --N.sup.+ R ... R.sup.2. ... that each monomer unit has a cationic charge ... by greater than or equal ... two, comprising (a) pretreating the natural **polysaccharide**, if insoluble in water, with an acid **solution** or, if soluble in water, with an alkaline ... ; (b) dissolving the pretreated **polysaccharide** of ... in water or in an organic solvent and reprecipitating ... **polysaccharide** in amorphous form from the **solution**; (c) suspending or dissolving in an organic solvent ... precipitated **polysaccharide** of step (b) and reacting same with **aliphatic** and/or aromatic amines and/or amino ... ... the structure intended to be introduced into the **polysaccharide** molecules as side chains; and (d) cationizing ... **polysaccharide** side chains by reacting same with quaternary **ammonium** salts having equal or different nitrogen substituents ... a reactive epoxide or ... hydrin group.

... ... reactions involved in introducing the side ... into the molecule and their cationization is chosen from the group consisting of **aliphatic** alcohols with 1-4 carbon atoms; polyalkylene ... ... carbon atoms; **aliphatic** ketones; and linear and ... ethers.

[illegible]

L68 ANSWER 1 OF 35 USPATFULL
AN 1999:112498 USPATFULL
TI Aqueous viscoelastic surfactant solutions for [illegible]
IN Balzer, Dieter, Haltern, Germany, Federal Republic [illegible]
PA Hüls Aktiengesellschaft, Marl, Germany, Federal Rep. [illegible] (non-U.S. corporation)
PI US 5,965,[illegible]
AI US 1996-76[illegible] (8)
RLI [illegible] of Ser. No. US 1995-421[illegible], filed [illegible], now abandoned
PRAI DE 1994-4416866 1994[illegible]
DT Utility
EXNAM Primary Examiner: Gupta, Yogendra; Assistant Examiner: Weidee, John R.
LREP Oblon, Spivak, McClelland, Maier & Neustadt, P.C.
CLMN Number of Claims: 11
ECL Exemplary Claim: 1
DRWN 1 Drawing Figure(s); 1 Drawing Page(s)
LN.CNT 615
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Aqueous, viscoelastic surfactant solutions for [illegible] of hair and skin which contain:

(A) from 4 to 25% by weight of an anionic surfactant;

(B) from 3 to 10% by weight of a betainic surfactant;

(C) from 0 to 20% by weight of a nonionic surfactant;

(D) from 0 to 6% by weight of an electrolyte;

(E) from 0 to 5% by weight of a water-soluble polymer; and

(F) from 0 to 5% by weight of a further constituent, in which the sum of the amounts of (A), (B), and (C) is at least 10% by weight and the sum of the amounts of (C), (D), and (E) is between 1 and 30% by weight, in each case based on the total weight of the aqueous solution, and having a shear modulus, G.sub.0, between 50 and 500 Pa at temperatures between 1[illegible] and 40.degree. C. and a pH of from 4 to 8, and in which the conditions for the identity of the storage modulus, G', and the loss modulus, G", are in the angular frequency range from [illegible].1 and 60 rad.multidot.s.sup.-1, exhibit optimum flow behavior for the intended applications.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

=> d kwic

L7 ANSWER 1 OF 45 USPATFULL
TI Preparation of lactams from **aliphatic** .alpha.,.omega.-dinitriles
AB A process for the preparation of five-membered to seven-membered ring lactams from **aliphatic** .alpha.,.omega.-dinitriles has been developed. In the process an **aliphatic** .alpha.,.omega.-dinitrile is first converted to an ammonium salt of an .omega.-nitrilecarboxylic acid in aqueous solution using a catalyst having an **aliphatic** nitrilase (EC 3.5.5.7) activity, or a combination of nitrile hydratase (EC 4.2.1.84) and amidase (EC 3.5.1.4) activities. The ammonium salt is then converted to a lactam by hydrogenation in aqueous solution, without isolation of the intermediate .omega.-nitrilecarboxylic acid or .omega.-aminocarboxylic acid. When the **aliphatic** .alpha.,.omega.-dinitrile is also unsymmetrically substituted at the .alpha.-carbon atom, the nitrile group [illegible] the .omega.-nitrilecarboxylic acid ammonium salt permits [illegible] hydrolysis. . . .
SUMM This invention relates to a process for the preparation of five-membered

... six-membered ring lactams from **aliphatic** .alpha.,.omega.-dinitriles by a combination of ... and chemical techniques. More particularly, an **aliphatic** .alpha.,.omega.-dinitrile is first converted ... salt of an .omega.-nitrilecarboxylic acid in aqueous solution ... a catalyst having an **aliphatic** nitrilase (EC 3.5.5.7 activity), ... combination of nitrile hydratase (EC 4.2.1.84 ...) and amidase (EC 3.5.1.4 activities. The ammonium salt ... the corresponding lactam by hydrogenation in aqueous solution, without isolation of the intermediate .omega.-nitrilecarboxylic acid or .omega.-aminocarboxylic acid. When the **aliphatic** .alpha.,.omega.-dinitrile is also unsymmetrically substituted at the .alpha.-carbon atom, the nitrile group ... the .omega.-nitrilecarboxylic acid ammonium salt ... during hydrolysis. ...

SUM1 ... additional advantage of the enzyme-catalyzed hydrolysis of nitriles over chemical hydrolysis is that, for the hydrolysis of a variety of **aliphatic** or aromatic dinitriles, the enzyme-catalyzed reaction can be highly regioselective, where only one of the two nitrile groups is hydrolyzed. ...

SUM2 ... corresponding carboxylic acid ammonium ... have been known for many years, but it is only recently that the use ... **aliphatic** nitrilases have been reported. Kobayashi et al. ... Chem., (1990), Vol. 46, 5867-5870; J. Bacteriology, (1990), Vol. ..., 7-4818) have described an **aliphatic** nitrilase isolated from ... rhodochrous K22 which catalyzed the hydrolysis of **aliphatic** nitriles to the corresponding carboxylic acid and ... salts; several **aliphatic** .alpha.,.omega.-dinitriles were also hydrolyzed, and glutaronitrile was converted to 4-cyanobutyric acid ammonium salt with 100% molar conversion using resting cells as catalyst. A nitrilase from Comamonas testosteroni has been isolated which can convert a range of **aliphatic** .alpha.,.omega.-dinitriles to either the corresponding .omega.-nitrilecarboxylic acid ammonium salt or the ... carboxylic acid diammonium salt (Canadian patent application CA ...,1 ...,614). ...

SUM3 ... Knowles (Biotechnology Lett., (1994), Vol. ..., 41-46) have reported the use of suspensions of Rhodococcus ... NCIMB 11216 having an **aliphatic** nitrilase activity for the hydrolysis of several 2-methylalkylnitriles. Complete conversion ... (+/-)-2-methylbutyronitrile to 2-methylbutyric acid ammonium salt was obtained, while. ...

SUM4 A combination of two enzymes, nitrile hydratase ... and amidase, can be also be used to convert **aliphatic** nitriles to the corresponding carboxylic acid ammonium salts in ... solution. Here the **aliphatic** nitrile is initially converted to ... by the nitrile hydratase and then the amide is subsequently converted by the. ...

SUM5 ... the intermediate formation of 5-cyanovaleramide using Brevibacterium sp. R312 (nitrile hydratase and amidase activity). A. Kerridge et al. (Bioorg. **Medicinal** Chem., (1994), Vol. 2, 447-455) report the use of Brevibacterium sp. R312 (nitrile hydratase and amidase activity) to hydrolyze prochiral ... ammonium salts. European Patent 178,106 B1 (Mar. 31, 1993) discloses ... selective transformation of one of the cyano groups of an **aliphatic** dinitrile to the corresponding carboxylic acid, amide, ester or thioester using the mononitrilase activity (defined ... either nitrilase or a. ...

SUM6 No prior art has been found which describes the ... ammonium salts of **aliphatic** .omega.-nitrilecarboxylic ... aqueous solution to directly produce the corresponding lactams. In closely related art, U.S. Pat. No. 4,339,409 describes ... ...

SUM7 ... to various acid ammonium salts. However, no prior art has been found which describes the cyclization of ammonium salts of **aliphatic** .omega.-aminocarboxylic acids under the cyclization reaction conditions of the present invention (i.e., in an aqueous solution containing an excess of added ammonium hydroxide to produce the corresponding lactams. In closely related art, the cyclization of **aliphatic** .omega.-aminocarboxylic acids (but not their ammonium salts) to the corresponding lactams under a variety of reaction conditions has been reported.. ... steam at from ...0-degree. C. to 4...degree. C. The synthesis of five-, six- and ... prepared by lactams by cyclodehydration of **aliphatic** .omega.- ... acids in

... alkaline silica gel in toluene, and with ... the water ... during the reaction, has ...

... No prior art has been found which describes the ... from the salts of **aliphatic** .omega.-nitrilecarboxylic ... aqueous solution containing methylamine to ... forming basic N-methyl lactams. In closely ... 1,5-dimethyl-2-pyrrolidinone was ...

... ... mixtures of products which are not ... significant advance would be a process ... **aliphatic** .alpha.,.omega.-dinitrile to the ... N-methylamine in aqueous solution, in high ... with high regioselectivity, with little byproduct ...

... A process for the preparation of five-membered ... six-membered ring lactams from **aliphatic** .alpha.,.omega.-dinitriles, having the steps:

... (a) contacting an **aliphatic** .alpha.,.omega.-dinitrile ... aqueous reaction mixture with an enzyme catalyst ... exhibiting either

... (1) an **aliphatic** nitrilase activity, or

... (2) a combination of nitrile hydratase and amidase activities, whereby the **aliphatic** .alpha.,.omega.-dinitrile is converted to an .omega.-nitrilecarboxylic acid ammonium salt.

... ... whole cell catalyst to select for a relative nitrilase activity or nitrile hydratase activity capable of ... the conversion of **aliphatic** .alpha.,.omega.-dinitriles to the corresponding .omega.-cyanocarboxylic acid ammonium salt. The whole cell catalyst to be treated is characterized by two types ...

... ... purified enzyme(s), or purified enzyme ... The enzyme catalysts can be immobilized on a support. Microorganisms which are characterized by an **aliphatic** nitrilase activity ... useful in the process are Acidovorax facilis 72-PF-15 (ATCC ...), Acidovorax facilis 72-PF-17 (ATCC 55745), and Acidovorax ...

... A process to prepare lactams from **aliphatic** .alpha.,.omega.-dinitriles in high yields has been developed which utilizes a combination of enzymatic and chemical transformations. In cases where the ...

... A. Conversion of an **aliphatic** .alpha.,.omega.-dinitrile to the corresponding .omega.-nitrilecarboxylic acid ammonium salt in high yield and with high regioselectivity.

... The first step of this process is the conversion of an **aliphatic** .alpha.,.omega.-dinitrile to the corresponding .omega.-nitrilecarboxylic acid ammonium salt, using an enzyme catalyst. The enzyme catalyst has either a nitrilase activity, ...omega.-nitrilecarboxylic acid ammonium salt (eqn. 1), or a combination of two enzyme activities, nitrile hydratase (NHase) and amidase, where the **aliphatic** .alpha.,.omega.-dinitrile is initially converted to the .omega.-nitrilealkylamide by the nitrile hydratase, and then the .omega.-nitrilealkylamide is subsequently converted to the ...

... A novel microbe Acidovorax facilis 72W (ATCC 55...) has been isolated from soil samples which had been exposed to **aliphatic** nitriles or dinitriles, and which could utilize 2-ethylsuccinonitrile as a nitrogen source. When used as a microbial whole-cell catalyst for ...

... There are currently no non-enzymatic methods for the selective hydrolysis of only one nitrile group of an **aliphatic** dinitrile to either an amide group or a carboxylic acid group. Complete conversion of the dinitrile. If such a ...

... ... 72-PF-17 (ATCC 55745), do not require pre-treatment of the cells prior to use as catalyst for the hydrolysis ... **aliphatic** .alpha.,.omega.-dinitrile to the corresponding ... ammonium salt of a .omega.-nitrilecarboxylic acid. ... parison of the yields of 4-CBA and 2-methylglutaric acid. ...

... ... heat-treated Acidovorax facilis 72W (ATCC ... 4 ... is used as a catalyst for the hydrolysis of aqueous solutions ... **aliphatic** .alpha.,.omega.-dinitriles succinonitrile (SUN, 1.25 M ... glutaronitrile (GLN, 1.5 M), the corresponding .omega.-nitrilecarboxylic acid ammonium salts 3-cyanopropionic acid (3-CPAA ...

... More than 31 different microbial cultures isolated from soil samples which had been exposed to **aliphatic** nitriles ... and which could grow in various nitriles ... were screened for high selectivity. ...

[illegible] . . . high yields by the direct hydrolysis of the .omega.-nitrilecarboxylic acid and the salt prepared by the enzyme-catalyzed hydrolysis of **aliphatic** .alpha.,.omega.-dinitriles in aqueous solution. [illegible] . . . from the isolation of the .omega.-nitrilecarboxylic acid and the .omega.-aminocarboxylic acid from the product mixture.

[illegible] After pH buffered aqueous product mixtures containing the ammonium salt of an .omega.-aminocarboxylic acid from an **aliphatic** .alpha.,.omega.-dinitrile by using an enzyme catalyst, the use of the enzyme catalyst and reaction of the resulting solution . . . as ammonium hydroxide in the presence of [illegible] hydrogenation catalyst was expected to produce an aqueous solution containing an **aliphatic** .omega.-aminocarboxylic acid ammonium salt (eqn. 4 : **STB3** The use of an excess of ammonia during the hydrogenation of a nitrile. . . .

[illegible] In addition to producing lactams from **aliphatic** .alpha.,.omega.-dinitriles, N-methyl-lactams are produced by the substitution of methylamine for ammonia in the [illegible] of aqueous solutions of the ammonium. . . .

[illegible] Two microorganisms have been isolated for use as [illegible] catalyst for the conversion of **aliphatic** .alpha.,.omega.-[illegible] to the corresponding .omega.-nitrilecarboxylic acids: [illegible] Pax Facilis [illegible] ATCC 55746) and Comamonas testosteroni 5-MAS [illegible] ATCC 55744 .

[illegible] **Aliphatic** .alpha.,.omega.-Dinitrile Hydrolysis [illegible]

[illegible] An aqueous **solution** containing the **ammonium** salt of an **aliphatic** .omega.-nitrilecarboxylic acid is prepared by mixing the corresponding **aliphatic** .alpha.,.omega.-dinitrile with an aqueous suspension of the appropriate enzyme catalyst (as identified in part A above). While microbial cells may be used as catalyst without any pretreatment. Alternatively, they may be immobilized in a polymer matrix (e.g., **alginate** or polyacrylamide gel (PAG) particles) or on an inorganic solid support (e.g., celite) to facilitate recovery and reuse [illegible] . . .

[illegible] Some of the **aliphatic** .alpha.,.omega.-dinitriles which are starting material in the present invention are only moderately water soluble. Their solubility is also dependent on [illegible] . . .

[illegible] The final concentration of **aliphatic** .omega.-nitrilecarboxylic acid ammonium salt in the product mixture at the conversion of the .alpha.,.omega.-dinitrile may range from [illegible] the solubility limit of the **aliphatic** .omega.-nitrilecarboxylic acid ammonium salt. Typically, the concentration of the .omega.-nitrilecarboxylic acid ammonium salt ranged from 0.1% M to 2.0 M. . . .

[illegible] Catalytic hydrogenation is a preferred method for preparing an **aliphatic** amine from an **aliphatic** nitrile. In the present invention, the .omega.-aminocarboxylic acid produced during the hydrogenation cyclizes to the corresponding five- or six-membered ring. . . . .omega.-nitrilecarboxylic acid prepared by centrifugation and filtration of the aqueous product mixture produced by the enzymatic hydrolysis of the corresponding **aliphatic** .alpha.,.omega.-dinitrile) is first mixed with [illegible] ammonium hydroxide and water to produce a solution which [illegible] from one to four. . . .

[illegible] In the following examples, which serve to further illustrate the invention and not to limit it, the % recovery of **aliphatic** .alpha.,.omega.-dinitriles and the % yields of the hydrolysis products formed during the microbial hydrolysis reactions were based on the initial. . .

[illegible]

L44 ANSWER 1 OF 45 USPATFULL
AN [illegible] 834 USPATFULL
TI A matrix particulate gel delivery system and [illegible] preparing a [illegible] gel particles
IN Dwille, Rachel, Jacksonville, Florida
Ding, Li, Jacksonville, Florida
PA Mary Kay Inc., Addison, Texas (non-U.S. corporation)
PI US 6461634 B1 20021008
AI US 1997-948,167 19971009 (8)
DT Utility
EXNAM Primary Examiner: Kawa, Ray
LREP Hamdan and Mansfield
CLMN Number of Claims: 14
ECL Exemplary Claim: 1
DRWN 5 Drawing Figure(s); 2 Drawing Page(s)
LN.CNT 1 OF
'AC INDEXING IS AVAILABLE FOR THIS PATENT.
AB A protective cosmetic particulate gel delivery [illegible] topically applied active agent employs an agar gel and a [illegible] polymer to retain the active agent in the gel. The particles have an average particle diameter of at least 0.05 mm while the restraining polymer has a molecular weight of at least 50,000 daltons and has retention groups to bind the active agent. The restraining polymer may be selected from the group consisting of polyquaternium 24, lauryldimonium hydroxyethylcellulose, cocodimonium hydroxyethyl [illegible]e, steardimonium hydroxyethylcellulose, quaternary ammonium substituted water-soluble polysaccharides, alkyl quaternary celluloses and polypeptides having or provided with retention groups to retain the active agent. The gel particles of the invention are manually brushable onto the skin to increase the surface area of the gel particle matrix to expose the restraining polymer to the skin or other body surface for release of the active agent. The delivery system can be incorporated into multiphase cosmetic formulations such as gels, creams and lotions.

'AS INDEXING IS AVAILABLE FOR THIS PATENT.

[illegible] Kwic 2

L71 ANSWER 2 OF 45 USPATFULL
AB A process for the preparation of five-membered or six-membered ring lactams from **aliphatic** .alpha.,.omega.-dinitriles has been developed. In the process an **aliphatic** .alpha.,.omega.-dinitrile is first converted to an ammonium salt of the .omega.-nitrilecarboxylic acid in aqueous solution using a catalyst having an **aliphatic** nitrilase (EC 3.5.5.7) activity, or a combination of nitrile hydratase (EC 4.2.1.84) and amidase (EC 3.5.1.4) activities. The ammonium salt, [illegible] the corresponding lactam by hydrogenation in aqueous solution, without isolation of the intermediate .omega.-nitrilecarboxylic acid or .omega.-aminocarboxylic acid. When the **aliphatic** .alpha.,.omega.-dinitrile is also unsymmetrically substituted at the .alpha.-carbon atom, the nitrile group [illegible] .omega.-nitrilecarboxylic acid ammonium salt [illegible] ammonium hydrolysis. [illegible]
SUMM The invention relates to a process for the preparation of five-membered or six-membered ring lactams from **aliphatic** .alpha.,.omega.-dinitriles by a combination of [illegible] and chemical technologies. More particularly, an **aliphatic** .alpha.,.omega.-dinitrile is first converted to [illegible] salt of an .omega.-nitrilecarboxylic acid in aqueous solution using a catalyst having an **aliphatic** nitrilase (EC 3.5.5.7) activity, or a combination of nitrile hydratase (EC 4.2.1.84) and amidase (EC 3.5.1.4) activities. The ammonium salt, [illegible] the corresponding lactam by hydrogenation in aqueous solution, without isolation of the intermediate

... omega.-nitrile-carboxylic acid ... omega.-amin... ... acid. When the **aliphatic** ...alpha.,.omega.-dinitrile is ... substituted at the ...alpha.-carbon atom, the nitrile ... omega.-nitrile-carboxylic acid and ... salt ... hydrolysis ...

... an additional advantage of the enzyme-... nitriles over chemical hydrolysis is that, ... hydrolysis of a variety of **aliphatic** ... aromatic dinitriles, the enzyme-catalyzed reaction can be highly regioselective, wherein only one of the two nitrile groups is hydrolyzed. ...

... corresponding carboxylic acid ammonium ... been known for many years, but it is only recently that the use of **aliphatic** nitrilases have been reported. Kobayashi et al. ... Vol. 46, 2567-2575; J. Bacteriology, 1990, ... 5407-5413] have described an **aliphatic** nitrilase isolated from ... rhodochrous K22 which catalyzes the hydrolysis of **aliphatic** nitriles to the corresponding carboxylic acid and ... ite; several **aliphatic** .alpha.,.omega.-dinitriles were also hydr... and glutaronitrile was converted to 4-cyanobutyric ... ammonium salt with ... % molar conversion using resting cells as ... nitrilase from ...Nocardia rhodochrous LL100-21 has been isolated which ... on a panel of **aliphatic** .alpha.,.omega.-dinitriles to either the ... ding .omega.-nitrile-carboxylic acid ammonium salt ... carboxylic acid diammonium salt. Canadian patent application ...

... Knowles (Biotechnology Lett., (1994), ... 41-46) have reported the use of suspensions of Rhodococcus ... NCIMB 11216 having an **aliphatic** nitrilase activity for the ... of several 2-methylalkylnitriles. Complete conversion of ...-2-methylbutyronitrile to 2-methylbutyric ... ammonium salt was obtained, while. ...

A combination of two enzymes, nitrile hydratase ... amidase, can be also be used to convert **aliphatic** nitriles to the corresponding carboxylic acid ammonium salts in ... solution. Here the **aliphatic** nitrile is initially converted to ... by the nitrile hydratase and then the amide is subs... converted by the. ...

... the intermediate formation of 5-cyano... using Brevibacterium sp. R312 (nitrile hydratase and ... activity). A. Perdigo et al. (Bioorg. **Medicinal** Chem., (1994), ... 447-455) report the use of Brevibacterium sp. R... the hydratase and amidase activity) to hydrolyze prochiral. ... e.g. European Patent 178,106 B1 (Mar. 31, 1993) discloses selective transformation of one of the cyano groups of an **aliphatic** dinitril... to the corresponding carboxylic acid, amide, ester or ... using the mononitrilase activity (defined as either nitrila... ...

No prior art has been found which describes the ... of ammonium salts of **aliphatic** .omega.-nitrilecarbo... in aqueous solution to directly produce the corresp... lactams. In closely related art, U.S. Pat. No. 4,329,498 des... ...

... to various acid ammonium salts. However, ... art has been found which describes the cyclization of ammoniu... of **aliphatic** .omega.-aminocarboxylic acids under the ... reaction conditions of the present invention (i.e., in aqueous solution containing an excess of added ammonium ... to produce the corresponding lactams. In closely related art, ... cyclization of **aliphatic** .omega.-aminocarboxylic acids (but not ... salts) to the corresponding lactams under a variety of reaction conditions has been reported.. ... steam at ... degree. C. to 4... degree. C. The synthesis of five-, six- and ... -membered ring lactams by cyclodehydration of **aliphatic** .omega.-... is ... alumina or silica gel in toluene, and with continuous removal of the water produced during the reaction, has. ...

No prior art has been found which describes the ... of ammonium salts of **aliphatic** .omega.-nitrilecarbo... in aqueous solution containing methylamine to produce the corresponding N-methyl lactams. In closely related ..., 1,5-dimethyl-2-pyrrolidinone was. ...

... mixtures of products which are not easily ... A significant advance would be a process for the ... of an **aliphatic** .alpha.,.omega.-dinitrile to the corresp... lactam

[illegible] 3-methylglutaronitrile to 3-methylglutaric acid, in high [illegible] high 3-cyanovaleric acid selectivity, with little by-product [illegible].

A process for the preparation of five-membered [illegible] five-membered ring lactams from **aliphatic** .alpha.,.omega.-dinitriles, having the steps:

(a) hydrolyzing an **aliphatic** .alpha.,.omega.-dinitrile [illegible] aqueous reaction mixture with an enzyme catalyst [illegible] followed by either

(1) an **aliphatic** nitrilase activity, or

(2) a combination of nitrile hydratase and amidase [illegible] claims, whereby the **aliphatic** .alpha.,.omega.-dinitrile is converted [illegible] .omega.-nitrilecarboxylic acid ammonium salt;

(b) [illegible] whole cell catalyst to select for a desired relative nitrilase activity or nitrile hydratase activity capable [illegible] the conversion of **aliphatic** .alpha.,.omega.-dinitriles [illegible] corresponding .omega.-cyanocarboxylic acid and [illegible]. The whole cell catalyst to be treated is characterized by two [illegible].

(c) [illegible] purified enzymes, or purified enzyme [illegible] enzyme catalysts can be immobilized on a support. Micro[illegible] which are characterized by an **aliphatic** nitrilase activity, [illegible] in the process are Acidovorax facilis 72-PF-15 (ATCC [illegible], Acidovorax facilis 72-PF-17 (ATCC 55745), and Acidovorax [illegible].

A process to prepare lactams from **aliphatic** .alpha.,.omega.-dinitriles in high yields has been developed which utilizes a combination of enzymatic and chemical [illegible] steps. In cases where the [illegible].

A. Conversion of an **aliphatic** .alpha.,.omega.-[illegible] the corresponding .omega.-nitrilecarboxylic acid and [illegible] in high yield and with high regioselectivity.

The first step of this process is the conversion [illegible] **aliphatic** .alpha.,.omega.-dinitrile to the corresponding .omega.-nitrilecarboxylic acid ammonium salt, using an enzyme catalyst. The enzyme catalyst has either a nitrilase activity, [illegible] .omega.-nitrilecarboxylic acid ammonium salt (eqn. 1), or a combination of two enzyme activities, nitrile hydratase (NHase) and amidase, where the **aliphatic** .alpha.,.omega.-dinitrile is initially converted [illegible] .omega.-nitrilealkylamide by the nitrile hydratase, and then the .omega.-nitrilealkylamide is subsequently converted [illegible].

A novel microbe Acidovorax facilis 72W (ATCC 55[illegible] has been isolated from soil samples which had been exposed to **aliphatic** nitriles or dinitriles, and which could utilize 2-ethylsuccinonitrile as a nitrogen source. When used as a microbial whole-cell catalyst this [illegible].

There are currently no non-enzymatic methods for the selective hydrolysis of only one nitrile group of an **aliphatic** dinitrile to either an amide group or a carboxylic acid group. Complete conversion of the dinitrile. If such a [illegible].

[illegible] 72-PF-17 (ATCC 55745), do not require [illegible] treatment of the cells prior to use as catalyst for the hydrolysis of [illegible] **aliphatic** .alpha.,.omega.-dinitrile to the corresponding ammonium salt of a .omega.-nitrilecarboxylic acid. A comparison of the yields of 4-CPA and 3-methylglutaric acid. [illegible].

[illegible] heat-treated Acidovorax facilis 72W (ATCC [illegible]) is used as a catalyst for the hydrolysis of aqueous solutions of the unsubstituted **aliphatic** .alpha.,.omega.-dinitriles succinonitrile (SCN, 1.25 M) or glutaronitrile (GLN, 1.5 M), the corresponding .omega.-nitrilecarboxylic acid ammonium salts 3-cyanopropionic acid (3-CPRA). [illegible].

More than 30 different microbial cultures isolated [illegible] soil samples which had been exposed to **aliphatic** nitriles or [illegible], and which could grow on various nitriles or amides as nitrogen source, were screened for high selectivity. [illegible].

[illegible] high yields by the direct hydrogenation [illegible] .omega.-nitrilecarboxylic acid ammonium salt precursors produced by the enzyme-catalyzed hydrolysis of **aliphatic** .alpha.,.omega.-dinitriles in aqueous solution. This method does not require the isolation of the .omega.-nitrilecarboxylic acid ammonium salt from the product. [illegible].

After producing an aqueous product mixture containing [illegible] ammonium salt of a .omega.-nitrilecarboxylic acid from an **aliphatic** .alpha.,.omega.-dinitrile by using an enzyme catalyst, [illegible] of the enzyme catalyst and recovery of the [illegible].

. . . an aqueous hydrolysis mixture in the presence of the hydrolytic catalyst was expected to produce the corresponding aliphatic .omega.-aminocarboxylic acid salt. e.g. 4: **STB** The use of an excess of water during the hydrogenation of a nitrile. . . .

In addition to producing lactams from aliphatic .alpha.,.omega.-dinitriles, N-methyl-lactams are produced by the substitution of methylamine for ammonia in the hydrolysis solution of the ammonium. . . .

Two microorganisms have been isolated from soil samples for the conversion of aliphatic .alpha.,.omega.-dinitriles to the corresponding .omega.-nitrilecarboxylic acids: Acidovorax facilis 72W (ATCC 55746) and Comamonas testosteroni 5-MGA - (ATCC 55744).

Aliphatic .alpha.,.omega.-Dinitrile Hydrolysis by . . .

An aqueous **solution** containing the **ammonium** salt of an **aliphatic** .omega.-nitrilecarboxylic acid is produced by mixing the corresponding **aliphatic** .alpha.,.omega.-dinitrile with an aqueous suspension of the appropriate microbial catalyst as identified in part A above. While microbial cells may be used as catalyst without any pretreatment. Alternatively, the cells may be immobilized in a polymer matrix (e.g., **alginate** or polyacrylamide gel). PAB particles may be in an immobilized support (e.g., zeolite) to facilitate recovery and reuse. . . .

Some of the **aliphatic** .alpha.,.omega.-dinitriles useful as starting material in the present invention are only moderately water soluble. Their solubility is also dependent on. . . .

The final concentration of **aliphatic** .omega.-nitrilecarboxylic acid ammonium salt in the product mixture at completion of the .alpha.,.omega.-dinitrile may range from 0.001 M to the solubility limit of the **aliphatic** .omega.-nitrilecarboxylic acid ammonium salt. Typically, the concentration of the .omega.-nitrilecarboxylic acid ammonium salt ranged from 0.10 M to 1.00 M. . . .

Catalytic hydrogenation is a preferred method for preparing an **aliphatic** amine from an **aliphatic** nitrile. In the present invention, the .omega.-aminocarboxylic acid produced during the hydrogenation cyclizes to the corresponding five- or six-membered ring. . . . .omega.-nitrilecarboxylic acid prepared by centrifugation and filtration of the aqueous product mixture produced by the enzymatic hydrolysis of the corresponding **aliphatic** .alpha.,.omega.-dinitrile) is first mixed with . . . and ammonium hydroxide and water to produce a solution which . . . from one to four. . . .

In the following examples, which serve to further illustrate the invention and not to limit it, the % recovery of **aliphatic** .alpha.,.omega.-dinitriles and the % yields of the hydrolysis products formed during the microbial hydrolysis reaction. . . . based on the initial. . . .

What is claimed is:

1. Isolated microorganisms characterized by an **aliphatic** nitrilase activity and selected from the group consisting of Acidovorax facilis 72W (ATCC 55746), Acidovorax facilis 72-T - (ATCC 55747), Acidovorax. . . .

[illegible] L14 1

L14 ANSWER 1 OF 6 HCAPLUS COPYRIGHT [illegible] ACS
AN [illegible] HCAPLUS
DN [illegible]
TI Alkyl polyglycoside compositions and emulsions containing them with improved whiteness
IN Bellenoit, Catherine; Arabian, Chantal; Lioeau, Alain; Nicolet, Nelly; Millius, Alain
PA Societe d'Exploitation de Produits pour les Industries Chimiques, Fr.
SO [illegible] Mokai Tokkyo Koho, 6 pp.
CODEN: JPXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP [illegible]	A2	[illegible]	JP 1999-262[illegible]	[illegible]
FR 2[illegible]	A1	[illegible]	FR 1998-11611	[illegible]
EP [illegible]	A1	[illegible]	EP 1999-4[illegible]	[illegible]

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO

PRAI FR 1998-11611 1998 917
OS MARPAT 132:241697
AB The compns., useful as emulsifiers for cosmetic emulsions, etc., comprise 0.6-6 * (A) alkyl polyglycoside mixts. contg. (a) 40- [illegible] of R1O(G1)k (R1 = C16-1[illegible] linear or branched **aliph** group; G1 = **saccharide** residue; k = 1-5) and R2O(G2)l (R2, G2, [illegible] have the same definition as R1, G1, and l, resp.) and 5-[illegible] of R3O(G3)m (R3 = C20-**22** linear or branched **aliph**. group; G3 = **saccharide** residue; m = 1-5) and R4O(G4)n (R4, G4, [illegible] have the same definition as R3, G3, and m, resp.) and 40-95* [illegible] ROH (R = C14-**22** linear or branched aliph. group, preferably [illegible] R1-R4). Also claimed are emulsions contg. [illegible] phase, [illegible] oily phase, and the compns. as main emulsifiers. A [illegible] contg. 45.5* C16 and C1[illegible] alcs. and 14.5* C20 and C22 alcs. was [illegible] with glucose at alc./glucose mol ratio 6:1 in the presence of acid [illegible] degree. for 5 h to give alkyl polyglycoside mixt. The mixt. was used for emulsification of isononyl isononanoate, sweet almond oil, and [illegible] to give stable white emulsions.

AN ACCESSION NUMBER: 1997:[illegible] CAPLUS COPYRIGHT [illegible] ACS
TI [illegible]
IN [illegible]
TI Transparent oily compns. containing polyoxyalkylene derivatives
IN Takeda, Mitsuji; Mukaiyama, Tsuneyo; Takahata, Masahiro; [illegible]
PA [illegible], Japan
SO Jpn. Kokai Tokkyo Koho, [illegible] pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP [illegible]	A2	1997[illegible]16	JP 1996-[illegible]	[illegible]

PRAI MARPAT [illegible]
AB The compns., with good moisture retension and good transparency, comprise **aliph**. acid esters, multivalent alcs. or **saccharides** or salts or derivs. of R1CO(OCHR2CO)pOH (R1CO = C6-**22** acyl groups; R2 = Me, H; p = 1-3). Thus, a compn. was prepd. from a mixt. of castor oil, tall oil and coconut oil mixt. 3, 85% EtOH 10, glycerol 5, sugar 10 and PITA 1.5% and balanced water.

L1 ANSWER 1 OF 1 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

AN 1988-[illegible] WPIX

TI [illegible]

IN [illegible]

PA [illegible]

SO [illegible]

LA Japanese

FAM. CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	A/B
[illegible]	A	1988	[illegible]	[illegible]

AB The detergents contain A. [illegible] sugar esters and B. [illegible] surfactants derived from C10-22 **aliph.** acids and **disaccharides** or [illegible]. Sugar acids and B. polyoxyethylene-type and [illegible] surfactants at component ratio A/B = 1:5 to 5:1 and A + B = 5-8%. The surfactants are useful for dishwashing, laundry, and [illegible]. Thus, a surfactant comprised of 5% fructose-contg. fructose [illegible] laurate contg. [illegible]% diester was prepd. by treating 0.56 mol [illegible] and 0.75 mol Me [illegible] in dimeth.-picoline in the presence of [illegible] stabilized [illegible] at 45 mm pressure with MeOH removal, removing the enzyme and 1/4 of the solvent and unreacted ester, and recrystg. from [illegible].

[illegible]

[illegible] ANSWER [illegible] ON STN [illegible]
AN [illegible]
DN [illegible]
TI [illegible]
IN [illegible]
PA [illegible]
SO [illegible]
DT [illegible]
FS [illegible]
LA [illegible]
FAN.CNT [illegible]

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO [illegible]	A1	19931125	WO 1993-US4613	19930520
	W: AU, BG, BR, CA, CZ, FI, HU, JP, KP, KR, LK, MG, MN, PL, RO, RU, SD, SK, UA				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	US 5487913	A	19960130	US 1992-918	19920723
	AU 9342496	A1	19931213	AU 1993-42496	19930520
	EP 646106	A1	19950405	EP 1993-911931	19930520
	R: DE, ES, FR, GB, IT				
	JP [illegible]	T2	19960416	JP 1993-516854	19930520
PRAI	US 1992-918		19920723		
	WO 1993-US4613		19930520		

CAPT MARPAT [illegible]

AB In the title process, a slurry of a hydrous saccharide source (e.g., dextrose monohydrate) in a first portion of an aliph. [illegible] exp. C2-22 alc. is added to a second portion of the alc. at elevated temp. and reduced pressure to form a mixt. with reduced water content, an acid catalyst is added, and the **aliph.** [illegible] reacted with the **saccharide** source to form the glyc. [illegible].

[illegible]

L[illegible] ANSWER [illegible] HIGHLIGHT [illegible]
AN [illegible]
DN [illegible]
TI **Monosaccharide** and **disaccharide** esters of **aliphatic** [illegible]-22 [illegible]
IN [illegible]
PA [illegible]
[illegible]
[illegible]
PI [illegible]
SO [illegible]

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
[illegible]	B	[illegible]	[illegible]	[illegible]
[illegible]	A1	[illegible]	[illegible]	[illegible]

PRAI [illegible]
AB A solvent-free [illegible] of the title products is prepd. by [illegible] mono- or disaccharides (e.g., sorbitol, sucrose) and fatty [illegible] (e.g., coconut oil, tallow, Et stearate) [111-61-5], or Me [illegible] [111-62-6] in presence of the transesterification catalyst K2CO3 [illegible] emulsifiers gel. alkylated mono- or diglycerides of fatty acids or fatty acid esters of mono- or disaccharides at 120-150.degree.. The [illegible] products can be used directly or after bleaching (with 1% H2O2 [illegible] wt./wt.) as detergents, emulsifiers, and foaming agents in cosmetics or as emulsifiers in food industry. E.g., a mixt. of 75 g coconut oil, [illegible] g emulsifiers was heated to 125.degree., 34 g sucrose and 5 g K2CO3 were added and after 1-2 h mixing K2CO3 was removed by decantation. The [illegible] product contained approx.8% sucrose esters.

[illegible]

AN [illegible]
AU [illegible]
TI [illegible]
SO [illegible]
DT [illegible]
LA [illegible]
PRAI [illegible]

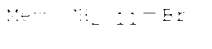
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

PRAI [illegible]

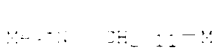
AB **Polysaccharide** matrices are esterified with polyunsaturated **aliph.** acids which are prostaglandin precursors in vivo. The [illegible] can be administered orally, parenterally, or topically for [illegible] inhibition of abortion. For example, the gamma.-linolenic acid (6,9,12-octadecatrienoic acid) was treated with triethylamine in the presence of N,N-dicyclohexylcarbodiimide to give the gamma.-linolenic acid imidazolide. Dextran (1,4-.alpha.-D-glucan) was esterified with the latter compd. to give a polymer containing 22.5% gamma.-linolenate groups.

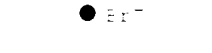
... ... 1

L1... ANSWER 1 OF ... HCAPLUS ...COPYRIGHT ... ACS
AN ... ...:...:... HCAPLUS
DN ... ...:...:4
TI ... Hydrophobically and electrostatic **alginate** derivatives: ... properties of their mixed aqs. solns. with oppositely charged surfactants
AU ... Baran, V. N.; Sarbash'ova, E. A.; Lukina, I. V.; **Pelletier, S.**; **Hubert, P.**; **Dellacherie, E.**
CS ... Physical Chemistry of Interfacial Phenomena Laboratory, ... RAN, Moscow, ...ssia, Russia
SO ... J. Colloid Interface Sci. ... , ... , 8...-81
... CODEN: JCISA8; ISSN: ...-97...
PB ... Academic Press
DT ... Journal
LA ... English
AB ... comparative study of the interfacial properties ... an anionic **polysaccharide**, sodium **alginate** (Alg), and its hydrophobically modified deriv. Alg-C..., obtained by ... dodecyl chains (... mol-% saccharide unit), was carried out in the absence or in the presence of an oppositely charged surfactant, dodecyltrimethylammonium bromide (DTAB). The drastically different behaviors which were found are interpreted in terms of the arrangement and mobility of the hydrophobic long alkyl chains, depending on the nature of their fixation, covalent or ionic, on the **polysaccharide** backbone. ... Academic Press.
IT **143-15-7D**, 1-Bromododecane, **alginate** derivs.
1119-94-4, Dodecyltrimethylammonium bromide
RL: MOA (Modifier or additive use); USES (Uses)
(hydrophobically assocg. **alginate** derivs. surface ... properties of their mixed aq. solns. with oppositely charged surfactants)
RN ... ...-...-7 HCAPLUS
CN ... Dodecane, 1-bromo- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN ... ...-...-4 HCAPLUS
CN ... 1-Dodecanaminium, N,N,N-trimethyl-, bromide (9CI) (CA INDEX NAME)





IT **9005-38-3**, Sodium **alginate** **9005-38-3D**, Sodium **alginate**, dodecyl derivs.
RL: PRP (Properties)
(hydrophobically assocg. **alginate** derivs. surface ... properties of their mixed aq. solns. with oppositely charged surfactants)
RN ... ...-...-3 HCAPLUS
CN ... Alginic acid, sodium salt (6CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN ... ...-...-... HCAPLUS
CN ... Alginic acid, sodium salt (6CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RE.CNT ...
RE
(1) ..., V; ... (2) ..., ...; ... (3) ..., ... HCAPLUS

L ... ANSWER ... OF ... HCAPLUS ... COPYRIGHT ... ACS

AN ... HCAPLUS

TI ... Biodegradable wound dressings containing **polysaccharide** derivatives

IN ... Martinault, Philippe; **Dellacherie, Edith; Hubert, Patrick; Houzelle, Marie Christine; Pelletier, Sophie**

PA ... Ono Laboratoires Pharmaceutiques, Fr.

SO ... Jpn. Kokai Tokkyo Koho, 6 pp.

... CODEN: JKXXAF

DT ... Patent

LA ... Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP ...	A2	...	JP 1999-...	...
FR ...16...	A1	...	FR 199...-...	199...31
AU 9942416	A1	...	AU 1999-42416	199...31
FR ...-...		199...31		

AB ... The invention provides a gel/liq.-reversible **wound** dressing, e.g. a **polysaccharide,** esp. **alginate,** having aliph. side chains.

IT **9005-32-7D,** Alginic acid, salts, reaction products with aliph. alkyl. amines and aliph. amines

RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(gel/liq.-reversible **wound** dressings containing **polysaccharide** derivs. having aliph. side chains)

RN ... 9...-32-7 HCAPLUS

CN ... Alginic acid (8CI, 9CI, ... (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L[illegible] ANSWER [illegible] OF [illegible] (STN Format)

AN [illegible] HCAPLUS

DN [illegible]

TI [illegible] characterization of pharmaceutical [illegible] f alginate salts by confocal Raman spectral imaging

AU [illegible]; Derbyshire, Philippe; **Maingault, Philippe**; Lamiable, Aimie

CS Lab. Chim. Anal., Fac. Pharm., Univ. de Tours, Tours, Fr.

SO Proc. SPIE-Int. Soc. Opt. Eng. (2009), 7183 Biomedical Applications of Raman Spectroscopy, 4pp.

CODEN: PSISDG; ISSN: [illegible]

PB SPIE-The International Society for Optical Engineering

DT Journal

LA English

AB Alginates are biol. polymers extd. from brown algae and are well known for their gelling and viscosifying properties and biocompatibility. Calcium alginate beads are used for spinning fibers which are particularly interesting as **wound** dressings since they exhibit antihemorrhagic and healing effects. Alginates are copolymers of .alpha.-L-guluronate (G) and .beta.-D-mannuronate (M). The M/G ratio and the monomer sequence are determinant for their physico-chem. properties but are difficult to control since they are variable depending on algae family, region of origin and season of their harvest. For rapid and non-destructive structural characterization of single fibers of alginates we used confocal Raman spectral imaging with a micron-scale spatial resoln. The characteristic Raman features were additionally correlated with the M/G ratio. For the fibers with a detd. av. [illegible] ratio, the spectral images appeared rather homogeneous. On the other hand, the Raman relative intensities were found to be dependent on the relative orientation of the fiber and laser polarization. We concluded that, with a micron-scale resoln., the fiber samples are well homogeneous and the polymer chains are highly ordered with domination of parallel stacking of the M-M blocks. The approach is actually being applied to study the alginate fibers at the tissular level.

IT **9005-32-7D**, Alginic acid, salts **9005-35-0**, Calcium alginate **56687-62-8D**, .beta.-D-Mannuronic acid, polymers **56688-68-7D**, .alpha.-L-Guluronic acid, polymers

RL: ANT (Analyte); PEP (Physical, engineering or chemical process); PRP (Properties); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)

(structural characterization of pharmaceutical fibers of alginate salts by confocal Raman spectral imaging)

RN [illegible]-32-7 HCAPLUS

CN Alginic acid (9CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN [illegible]-35-0 HCAPLUS

CN Alginic acid, calcium salt (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN [illegible]-62-8 HCAPLUS

CN .beta.-D-Mannopyranosyluronic acid (9CI) (CA INDEX NAME)

[illegible]

RN [illegible]-68-7 HCAPLUS

CN .alpha.-L-Guluronic acid (9CI) (CA INDEX NAME)

[illegible]

RE.CNT [illegible]

RE
[illegible], P; Yale Cytol Exp Lab, Dev, ELEC MICROSC
[illegible], P; Yale Cytochem Enzym Lab, VLS, ELEC MICROSC
[illegible], P; E [illegible] Lab Inv, CYT, ELEC MICROSC
[illegible], P; Armed Forces Inst Pathology Chemistry and El [illegible] Lab, CYT, ELEC MICROSC
[illegible], P; Pathology Lab, VIR, ELEC MICROSC
ALL CITATIONS AVAILABLE IN THE RE FORMAT

[illegible]

L[illegible] ANSWER 4 [illegible] HCAPLUS COPYRIGHT [illegible] ACS
AN [illegible] HCAPLUS
DN [illegible]
TI Hyalur[illegible]ate-**alginate** combination f[illegible] the preparati[illegible] [illegible] biomaterials: investigation of the behavior in aq[illegible] [illegible]
AU Oerther, Sandra; Payan, Elisabeth; Lapicque, Fran[illegible]; [illegible], Nathalie; **Hubert, Patrick**; Muller, Sylvaine; Netter, Patrick; [illegible], Francoise
CS EP 1[illegible]4, Faculte de Medecine, UMR 7561 CNRS, FR CNRS [illegible], Laboratoire de Pharmac[illegible], Physiopathologie et Pharmacologie Art[illegible]ulaires, UHP Nancy 1, Vandoeuvre les Nancy, 545[illegible], Fr.
SO Biochim. Biophys. Acta [illegible], 14[illegible], 1[illegible]-1[illegible]4
CODEN: BBACAQ; ISSN: [illegible]6-3[illegible]
PB Elsevier Science B.V.
DT Journal
LA English
AB With the aim of producing a biomaterial for surgica[illegible] applications, the **alginate**-hyaluronate assocn. was investigated. [illegible] techniques were used to assess the existence of polymer interact[illegible] in aq. solns. [illegible] [illegible] mg/mL. **Alginate** was obtained from algae and [illegible] was purified from rooster comb. Viscometry measure[illegible] using the capillary technique or the Couette flow, together with [illegible] investigations, evidenced the moderate significance of interactions between the [illegible] **polysaccharides** in dil. solns. In addn., the case [illegible] [illegible] [illegible] and concg. [illegible] mg/mL **alginate** was approached [illegible] measurements in the flow mode; the behavior of the [illegible] assocns. appeared as a compromise between those of individual **polysaccharides**.
IT **9005-38-3**, Sodium **alginate 9067-32-7**, Sodium hyaluronate
RL: PRP (Properties); THU (Therapeutic use); BIOL (Bi[illegible]al study); USES (Uses)
(hyaluronate-**alginate** combination for prepn. of [illegible]materials)
RN [illegible]-3 HCAPLUS
CN A[illegible] acid, sodium salt ([illegible]CI, [illegible]) (CA INDEX NAME)

*** [illegible]RUCTURE DIAGRAM IS NOT AVAILABLE ***
RN [illegible]67-[illegible]-7 HCAPLUS
CN Hyaluronic acid, sodium salt (9CI) (CA INDEX NAME

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RE.CNT 33
RE
[illegible] [illegible]dmeier, R; Pharm Res 1989, V6, P413 HCAPLUS
[illegible] [illegible]land, R; Biopolymers 1970, V9, P799 HCAPLUS
[illegible] [illegible]ngfuchat, A; Carbohydr Res 1996, V[illegible]4, P[illegible]5 HCAPLU[illegible]
[illegible] [illegible]artis, A; J Control Release 1996, V4[illegible], P179 HCAPLU[illegible]
[illegible] Grant, G; FEBS Lett 1973, V32, P195 HCAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L... ANSWER ... OF ... MARPAT COPYRIGHT ... ACS
AN ... MARPAT
IN ...
TI **Wound** dressing with a calcium alginate matrix
IN ... Gray, Michel; **Maingault, Philippe**
PA ... S.a r.l., Fr.
SO ... Fr. Demande, ... pp.
... CODEN: FRXXBL
DT ... Patent
LA ... French
FAN.CNT ...

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR ...	A1	199... 818	FR 1998-1...	1998...
FR ...	B1	1999...		
EP ...48...1	A1	1999...6 ...	EP 1997-4...	1997...
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, ..., NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
AU 9...48...7	A1	1999...611	AU 1997-48...7	1997...
JP ...	A2	199... 416	JP 1997-...	1997...

PRAI FR 1998-... ...

AB A **wound** dressing comprises a calcium alginate matrix (...%). The matrix has at least a multivalent metal alginate excluding calcium. The multivalent metal alginate is obtained from sodium alginate by extrusion in a wire gauge placed in a coagulation bath containing a ... multivalent metal salt. The dressing can be used in the form of nonwoven cloth.

IT **9019-44-7 9019-49-2**, Zinc alginate **115966-00-2** **146836-73-9**, Selenium alginate
RL: DEV (Device component use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(fiber; **wound** dressing with calcium alginate matrix)

RN 9...9-44-7 HCAPLUS
CN Alginic acid, zinc salt (...CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN ...-44-... HCAPLUS
CN Alginic acid, zinc salt (...CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 115966-... -2 HCAPLUS
CN Alginic acid, manganese(2+) salt (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 146836-73-9 HCAPLUS
CN Alginic acid, selenium salt (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT **9005-35-0**, Calcium alginate
RL: DEV (Device component use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
wound dressing with calcium alginate matrix

RN 9...-...-... HCAPLUS
CN Alginic acid, calcium salt (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

... ...

L... ANSWER ... OF ... HCAPLUS ... COPYRIGHT ... ACS
AN ... ...:...:... HCAPLUS
DN ... ...:...:...
TI ... Role ... Rheol. study ... aq. solns. ... hydrophobically-... derivs. ... propylene glycol alginate
AU ... ...ch, L.; **Hubert, P.**; ...e, A.; **Houzelle, M.C.**; ...ique, A.; Mar...al, P.; **Dellacherie, E.**
CS ... ...RAS, LE ...M-ENSIC, NANCY, ... 1, Fr.
SO ... Biol. Macromol., ..., ..., ...-...
... CODEN: BIMAT8; ISSN: ...-...74
DT ... ...rnal
LA ... English
AB ... We rep. ... results ... the physicochem. study in ... ... of amphiphilic **polysaccharide** derivs. obtained by attachment of long chain alkylamines ...NH, n = ..., 12, 14 ...) to propylene glycol alginate, a partially esterified deriv. of sodium **alginate**
...
IT **111-86-4D**, n-...ylamine, reaction products with ...
alginate 124-22-1D, n-...ylamine, reaction ...
with propylene **alginate 2016-42-4D**, n-Tetradecylamine, reaction products with propylene **alginate 9005-37-2D**, Propylene glycol alginate **alginate**, reaction products with ... ...
RL: PEP ... Physical, engineering or chemical process ; ... Properties); PROC ... Process
... rheol. study ... aq. solns. ... hydrophobically-... ... deriv. ... propylene glycol **alginate**
RN ...-86-4 HCAPLUS
CN ... ...ylamine (9CI) ... INDEX NAME)

...

...

RN ...-22-1 HCAPLUS
CN ... ...ylamine (9CI) ... INDEX NAME)

...

...

RN ...6-42-4 HCAPLUS
CN ... ...decanamine (9CI) ... INDEX NAME

...

...

RN ... ...-... HCAPLUS
CN ... ... acid, ester with ...-propanediol (9CI) (CA INDEX NAME)

CM ...

CRN ... ...-...
CMF ... ...
CCI ... ...

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

...

RN ...-...-...
MF ... ...

L[illegible] ANSWER [illegible] HCAPLUS [illegible] COPYRIGHT [illegible] ACS
AN [illegible] HCAPLUS
ED [illegible]
TI **alginate**-beads coated with polycationic gels for [illegible] release of chitosan and DEAE-dextran
AU [illegible]; **Dellacherie, E.**
CS Lab. Chimie-Physique Macromoleculaire, ENSIC, Nancy, [illegible], Fr.
SO [illegible], Vol. 4, [illegible]
[illegible]
DT [illegible]
LA English
AB The retention capacity of **alginate** beads coated by the polycationic polymers, chitosan or diethylaminoethyl-dextran (DEAE-dextran) was studied. When beads were stored [illegible] in a [illegible] NaCl soln., the chitosan coating was stable for more than 6 mo or less than 1 mo, resp. The greater the concn. of the polycationic **polysaccharides** in the formation soln. of the beads, the lower the Hb release. Hb release depended on the pH conditions of bead formation. With chitosan, the lowest release was obsd. at pH 5.4 (4.4% of released Hb) and at pH [illegible] (1.5%), resp., during bead formation or storage. With DEAE-dextran the lowest release was obsd. at pH 4 [illegible].
IT **7440-70-2**, Calcium, biological studies
RL: BAC (Biological activity or effector, except adverse); BIOL (Biological study, unclassified); PROC (Process)
calcium-alginate beads coated with polycationic gels for [illegible] release of chitosan and DEAE-dextran
RN 7440-70-2 HCAPLUS
CN Calcium (8CI, 9CI) (CA INDEX NAME)

CC 63

IT **9005-32-7**, Alginic acid **9012-76-4**, Chitosan
9015-73-0, Diethylaminoethyl-dextran
RL: BAC (Biological activity or effector, except adverse); BIOL (Biological study); PROC (Process)
calcium-alginate beads coated with polycationic gels for [illegible] release of chitosan and DEAE-dextran
RN [illegible]-32-7 HCAPLUS
CN Alginic acid (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9012-76-4 HCAPLUS
CN Chitosan (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN [illegible]-73-0 HCAPLUS
CN Dextran, 2-diethylaminoethyl ether (9CI) (CA INDEX NAME)

CM 1

CRN 9004-54-0
CMF Unspecified
CCI IDS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN [illegible]-[illegible]-4
CMF [illegible]

[illegible]

... ...

L19 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2000 ACS
AN 2000:[illegible] HCAPLUS
DN 133:[illegible]
TI Covalent grafting of a short polyether to sodium **alginate**: synthesis and characterization of the resulting amphiphilic derivative
AU [illegible]; Mazet, Marie-Christiane; Delestre, Christine; **Hubert, Patrick**; **Dellacherie, Edith**
CS Lab. Chim. Ing., Chim. Nancy 1, Vand[illegible]uvre les Nancy, [illegible], Fr.
SO Polym. Bull. (Berlin), 1[illegible], 44(4), 467-[illegible]
CODEN: PBERDY; ISSN: 0[illegible]-8467
DT Journal
LA English
AB A covalent sodium **alginate**-polyoxyethylene model [illegible] was prepd. by reductive amination of aldehyde sodium **alginate**, in order to obtain a polymer with amphiphilic properties. Characterization of this deriv. was carried out by NMR spectroscopy, [illegible] and low-angle laser light scattering. The data [illegible] suggested a limited capacity of the polymer structure to expand, resulting from intramol. self-association and formation of hydrophobic microdomains.
IT **9005-38-3DP**, Sodium **alginate**, reaction products with alpha-amino,omega-benzyloxy tetraoxyethylene **86770-77-6DP**, reaction products with sodium **alginate**
RL: PREP (Preparation)
(amphiphilic, synthesis and limited expansion capacity of)
RN [illegible]-38-3 HCAPLUS
CN Alginic acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN [illegible]-77-6 HCAPLUS
CN 2,5,8,11,14-Pentaoxahexadecan-16-amine, 1-phenyl- (CA INDEX NAME)

[illegible]

[illegible]

=> d bib abs l19 1

L19 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2000 ACS
AN [illegible] HCAPLUS
DN 133:[illegible]
TI FT-Raman spectroscopy and Raman multispectral imaging of alginate **wound** dressings in vitro and in tissues
AU [illegible]; Carpentier, Philippe; **Maingault, Philippe**; Dubois, Pierre
CS Laboratoire de Chimie Analytique, Universite de Tours, [illegible], Fr.
SO Spectrosc. Biol. Mol.: New Dir., Eur. Conf., 4th [illegible], 197-[illegible].
Editor(s): Greve, Jan; Puppels, Gerwin J.; Otto, C[illegible]. Publisher: Kluwer Academic Publishers, Dordrecht, Neth.
CODEN: [illegible]
DT Conference
LA English
AB The structural organization of the calcium alginate [illegible] where studied by Raman multispectral imaging with red laser excitation.
RE.CNT 11
RE

SEARCHED BY SUSAN HANLEY [illegible]

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FILE 'HOME' ENTERED AT 13:37:11 ON 26 SEP 2000

FILE 'HCAPLUS' ENTERED AT 13:37:24 ON 26 SEP 2000
L1             7 S MAINGAULT P?/AU
L2           139 S DELLACHERIE E?/AU
L3           467 S HUBERT P?/AU
L4             4 S HOUDELLE M?/AU
L5           561 S PELLETIER S?/AU
L6             0 S L1 AND L2 AND L3 AND L4 AND L5
L7           971 S L1-5
L8            18 S L7 AND ALGINAT?
L9        106926 S ALIPHATIC
L10            1 S L8 AND L9
L11          121 S L9(5A)SACCHARID?
L12            1 S L11 AND L9
L13        37413 S ?POLY?SACCH?
L14            6 S L9 AND L13
L15            4 S L7 AND ?WOUND?
L16            9 S L14 OR L15
               SELECT RN L16 1-9

FILE 'REGISTRY' ENTERED AT 13:43:32 ON 26 SEP 2000
L17           20 S E1-20

FILE 'HCAPLUS' ENTERED AT 13:43:45 ON 26 SEP 2000
L18            8 S L16 AND L17
L19            1 S L16 NOT L18
L20        17412 S ?ALGIN?
L21         1537 S ?ALGIN?(L)THU/RL
L22          154 S L21 AND (WOUND OR DRESSING)
L23            6 S 22 AND L11
L24            6 S L23 NOT L16
L25       366738 S ?AMMONIUM? OR NH4
L26          101 S L21 AND L25
L27           33 S L13 AND L26
L28           30 S HYDR?(W)GEL
L29            3 S L28 AND L20
L30        15671 S ALGINIC OR ALGINATE
L31            3 S L28 AND L30
L32            4 S L25 AND L26 AND L9
L33          178 S GEL AND L26 AND L30
L34            4 S L33 AND L9
L35       692428 S CARBOXYL? OR ESTER?
L36         1683 S L35 AND (L20 OR L30)
L37          227 S L36 AND L26
L38           69 S L37 AND L13
L39            3 S L38 AND L9

FILE 'STNGUIDE' ENTERED AT 14:00:07 ON 26 SEP 2000

FILE 'HCAPLUS' ENTERED AT 14:09:35 ON 26 SEP 2000
L40       453894 S GEL(?A)SOL OR ?REVERS?
L41            3 S L38 AND L40
L42           69 S L38 NOT L16
L43           12 S L42 AND PY>1999
L44           57 S L42 NOT L43

FILE 'MEDLINE, BIOSIS, USPATFULL' ENTERED AT 14:13:16 ON 26 SEP 2000
L45        41041 S ?ALGIN? OR ALGINAT? OR ALGINIC
L46       413815 S NH4 OR ?AMMONIUM?
L47       648546 S GEL
L48     11868841 S SOL OR SOLUTION
L49        12082 S L47(5A)L48
L50        57634 S RHEO?
L51       448458 S POLYSACCHARID?
L52      1145639 S LONG-CHAIN? OR ALIPHATIC?
L53        11741 S L46 AND (L51 OR ALKYL?)
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in vendor search

8 cites w/ 20 cpds displayed

1 cite no cpds

57 cites

L54 14445 S L53 AND L48
L55 1058 S L54 AND (L44 OR L5)
L56 1488 S L48 AND L55
L57 [illegible] S L51 P (ALKYL OR L5)
L58 [illegible] S L48 P (ALKYL OR L5)
L59 [illegible] S L57 OR L58
L60 [illegible] S L59 P L46
L61 150 S L60 P (L44 OR L43)
L62 2 S L48 AND L61
L63 41 DUP REM L62 DUPLICATES REMOVED
L64 35 S L63 AND (MEDICINE OR SURGI OR WOUND)
L65 [illegible] S L63 AND MACROMOLECULE
L66 1 S L61 AND MACROMOLECULE
L67 [illegible] S L61 AND (L48 OR L5)
L68 35 S L66 OR L67 cites 1 & 2 only
L69 11 S L51 AND L64
L70 64 S L51 AND L63
L71 29 S L51 AND L64
L72 45 S L69 OR L71 selected citations